

71
CONVENTION NUMBER

the

Journal

*of the association for physical
and mental rehabilitation*



MAY-JUNE, 1957

VOL. 11, NO. 3

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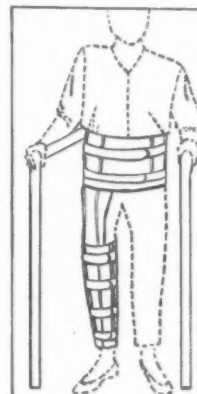
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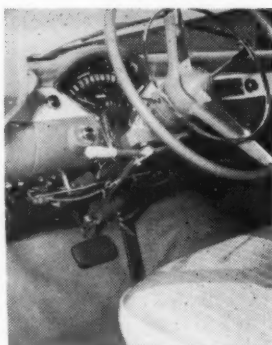
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THE JOURNAL OF THE ASSOCIATION FOR PHYSICAL AND MENTAL REHABILITATION

Information For Contributors

MANUSCRIPT: Manuscripts should not exceed ten (10) typewritten pages; approximately 5,000 words. Manuscripts must be the original copy, not a carbon, typed double-spaced with margins of one (1) inch for large type and one and a half (1½) inches for the small.

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REFERENCES: References in the text, should be in the form of footnotes, numbered consecutively throughout the manuscript. Additional references for collateral reading should be assembled alphabetically by author at the end of the article. This requires, in order, name of author, title of article, name of periodical or book, volume, page, month and year. For example: Morton Dudley J., *The Human Foot*, Columbia University Press, 1953. Kraus, Hans, M.D., "Therapeutic Exercises in Rehabilitation," *Journal of Physical and Mental Rehabilitation*, Vol. 3, pp. 7-10, June, 1959.

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"I Will," Chicago's motto, expresses what the committees feel in striving to make this an outstanding and memorable convention. We are proud to have been selected and happy to have the opportunity to be host to this, the first joint convention.

The Midwest Chapter of the Association For Physical and Mental Rehabilitation, the Illinois Chapter of the American Association of Rehabilitation Therapists, and the Central Chapter of the Association of Medical Rehabilitation Directors and Coordinators extends a most cordial welcome to all members, families, friends, and guests. The city and hotel officials have cooperated graciously with the Conference Committee to make this Eleventh Anniversary a success professionally and socially.

The Conrad Hilton Hotel, advertised as the World's Largest and Friendliest Hotel, is located within walking distance of the famous "Loop." Such cultural centers as the Art Institute, Chicago Museum of Natural History, Adler Planetarium, Shedd Aquarium, Buckingham Fountain, Grant Park, and many, many others help to make Chicago host to more than ten million vacationists, tourists, and convention delegates annually. For relaxation and social activities Chicago's lake front swimming cannot be equalled. Theatres, restaurants and cabarets are within walking distance of the hotel. Chicago, because of its central location, is easily accessible by any and all means of transportation. All major air, rail, and bus lines provide excellent service to and from Chicago.

The Eleventh Scientific and Clinical Conference has been planned to cover all phases of rehabilitation. All types of presentations will be utilized—symposia, panels, workshops, etc. Our objective is to provide an opportunity for all members to receive practical instruction and answers to some of their individual treatment problems from these presentations. Chicago is fast-becoming the medical center of the United States. Many world famous leaders in the field will take part in this, the first joint convention.

Administrative meetings will be held July 6 and 7. Registration begins Sunday, July 7 at 1:00 p. m. The conference sessions will start Monday, July 8, at 1:30 p. m., and will conclude at noon Friday, July 12. The daily sessions have been planned to provide adequate leisure time for the delegates. General and sectional meetings will provide each member with an opportunity to learn about and discuss some of the newer aspects of treatment. There will be adequate time provided for questions and answers. Sectional workshops, seminars, therapist presentations, slides, and films will make the entire program interesting and instructive.

Many manufacturers and distributors of equipment used in Physical Medicine and Rehabilitation will exhibit their products at this convention. Time has been provided to enable you to observe these demonstrations and become acquainted with the companies' products and representatives. Exhibitors play a very important part in all conventions as they serve to bring members up to date on the newest developments in the field. Many scientific exhibits will be presented by allied organizations to further demonstrate the complete rehabilitation program and the unanimity of purpose of the various agencies.

We urge you to have your family accompany you to this conference. We are certain the wives and children will enjoy the hospitality and activities planned for them.

We believe the ever increasing number of disabled and their mounting problems, emotional, physical, social, and economic must be met and solved by those working in rehabilitation. Our aim is to change this national problem to a national resource. The 1957 joint convention is dedicated to review this problem in its entirety.

Your officers and conference committeemen have worked hard to make this eleventh Association For Physical And Mental Rehabilitation homecoming convention a memorable occasion to you and to the association. The only missing ingredient needed to insure success is your attendance. Plan now to join us in Chicago, site of the first convention, from July 7 through July 12, 1957.

NORMAN N. TENNER
Conference Co-chairman

GENERAL INFORMATION

Registration:

Registration will begin at 1:00 P. M. Sunday, July 7, 1957. The registration desk will be located in the corridor on the third floor of the Conrad Hilton Hotel. The conference registration fee is \$10.00 which includes cost of banquet. Registration fee for single day is \$1.00 and includes both morning and afternoon sessions. Students will be registered with no charge upon presentation of their student identification card.

Badges:

All members, guests, and visitors will be required to wear the appropriate official conference badge for admission to the general and sectional assembly rooms. Those attending single sessions will be provided with an appropriate badge at the time of registration. All speakers and guests are requested to register, at which time they will be issued an official badge admitting them to all sessions.

Hotel Reservations:

Ample hotel reservations should be available at the headquarters hotel. Those attending the conference will find that the Conrad Hilton offers the best in accommodations at rates that compare favorably with any in the downtown area. Anyone without hotel reservations should inquire at the registration desk.

Banquet:

All members and guests attending the conference are invited to attend the banquet on Thursday evening, July 11, 1957 at 7:00 P. M. The committee has been fortunate in obtaining as banquet speaker Dr. Kenneth McFarland, nationally known educator, administrator, lecturer, and educational consultant to General Motors. Members will obtain their tickets at the time of registration as the cost of the banquet is included in the registration fee of \$10.00. Visitors may obtain banquet tickets at the registration desk at a cost of \$6.00.

Commercial Exhibits:

Commercial exhibits will be located in the Williford Room, across the corridor from the Waldorf Room where the general sessions will be held. All those attending the conference are urged to visit these exhibits. A wide variety of rehabilitation equipment will be displayed and should be of considerable interest to those attending. At time of registration a card will be issued making paid registrants eligible for many valuable door prizes when verified by exhibitors.

Scientific Exhibits:

The scientific exhibits will be located in the Astoria Room. There has been an excellent response reported by the Scientific Exhibits Committee, and all attending should find these exhibits both interesting and informative.

Entertainment:

Chicago offers much in the way of entertainment and interest for those attending the conference. The Social Committee will have information for members, guests and their families that will assist you in selecting activities and sightseeing. Some activities have been definitely scheduled while others are optional.

BUSINESS MEETINGS — APMR

Conrad Hilton Hotel, Chicago

Saturday, July 6

10:00-12:00 Noon.
1:30- 2:30 P.M.
2:30- 5:00 P.M.

LEGISLATIVE AND EXECUTIVE MEETINGS
JOINT LEGISLATIVE AND EXECUTIVE MEETING — By Invitation.
LEGISLATIVE AND EXECUTIVE MEETINGS

Sunday, July 7

9:00-12:00 Noon.
1:30- 6:00 P.M.

LEGISLATIVE AND EXECUTIVE MEETINGS
LEGISLATIVE AND EXECUTIVE MEETINGS

Monday, July 8

9:00-12:00 Noon.

LEGISLATIVE AND EXECUTIVE MEETINGS

Tuesday, July 9

5:00- 7:00 P.M.

MEETING OF GENERAL ASSEMBLY (Annual Election of Officers).

TENTATIVE PROGRAM

Joint Scientific and Clinical Conference

Association for Physical and Mental Rehabilitation
American Association of Rehabilitation Therapists
Association of Medical Rehabilitation Directors and Coordinators

July 7-12, 1957

The Conrad Hilton, Chicago, Ill.

CONFERENCE THEME—"Rehabilitation of the Disabled: Converting
a National Problem to a National Resource"

MONDAY — July 8

8:30- 4:30—Registration.
9:00-12:00—Legislative and Executive Meetings.
A.P.M.R. — Room 2.
A.M.R.D.C. — Room 4.
A.A.R.T. — Room 1.
(Coffee served in Room 3).
1:30- 2:50—OPENING OF CONFERENCE— General Ses-
sion—*Waldorf Room*.
CALL TO ORDER — Norman N. Tenner, Conference Co-
Chairman.
INVOCATION
WELCOME
RESPONSE—Charles Armon, President, AMRDC; Arthur
Landy, President, APMR; Edgar Plott, President, AART.
INTRODUCTION OF CHAIRMAN—Medard De Rocker, Confer-
ence Co-Chairman.
CHAIRMAN—Richard H. Young, M.D., Dean, Northwestern
University Medical School.
KEYNOTE ADDRESS—Melvin J. Maas, Chairman, President's
Committee on Employment of the Physically Handi-
capped.
2:50- 3:50—SOME VIEWPOINTS ON REHABILITATION AS SEEN
BY THE EMPLOYER—John Convery, Industrial Relations
Department, National Association of Manufacturers.
4:00—To be announced.
4:20- 4:30—REMARKS—Richard H. Young, M.D., Dean,
Northwestern University Medical School.
4:30—ADJOURN—Charles Armon, President, AMRDC.
8:30—Midwest Chapter Party—*Waldorf Room*.

TUESDAY — July 9

8:30- 4:30—Registration.
9:00—GENERAL SESSION—*Waldorf Room*
CALL TO ORDER—Arthur Landy, President, APMR.
CHAIRMAN—John F. Sheehan, M.D., Dean, Stritch School
of Medicine, Loyola University.
9:20-12:00—PANEL DISCUSSION BY REPRESENTATIVES OF OR-
GANIZATIONS CONCERNED WITH THE HANDICAPPED — Louis
B. Newman, M.D., Moderator.
Arthritis and Rheumatism Foundation—Representative to
be announced.
National Tuberculosis Association—Arthur Eisenberg.
American Heart Association—Louis de Boers.
National Multiple Sclerosis Society—Representative to be
announced.
Association for Mental Health—Richard P. Swigart.

American Foundation for the Blind—Representative to be
announced.
National Foundation for Infantile Paralysis—Mrs. Frances
Karlsteen.
National Society for Crippled Children and Adults—Re-
presentative to be announced.
12:15 — Luncheon — Medical Advisory Board, Association
Presidents, Certification Board, Convention Chairmen and
Guests.
1:30-5—SECTION MEETINGS
APMR—*Beverly Room*. Arthur Landy, Chairman.
1:40—KEYNOTE ADDRESS—John E. Davis, Sc.D.
2:40—John Murphy, Corrective Therapist, VAH, Chilli-
cothe, Ohio.
3:10—REHABILITATION CAMPING — Leslie M. Root, Chief,
Corrective Therapy, VAC, Wood, Wisc.
4:00—Paul Conte, Corrective Therapist, VAH, Downey, Ill.
4:30—Joseph Phillips, Chief, Corrective Therapy, VAC,
Wadsworth, Kans.
AMRDC—*Meeting Room 2*—Charles Armon, Chairman.
1:35-4:30 — WORKSHOP — William Key, Ph.D., Moderator;
Joseph Koczur, M.D., Oliver Stringer, and others to be
announced.
AART—*Bel Aire Room*—Edgar Plott, Chairman.
1:40—KEYNOTE ADDRESS—Louis Jensen, M.D., VAH, Hines,
Ill.
2:30—INDUSTRIAL THERAPY — Lewis A. Leavitt, M.D. and
Garvin Mugg.
3:30—Ernest V. Clements, Ph.D.
4:30—Joseph W. Wepman, Ph.D.
5:00-7:00—Meetings of General Assembly (All Organiza-
tions); Election of officers.
Evening — Party sponsored by Eastern States Chapter,
APMR—*Waldorf Room*.

WEDNESDAY — July 10

8:30-12:00—Registration.
9:30—Meeting, American Board for Certification of Corre-
ctive Therapists.
9:00-12:00—SECTION MEETINGS
APMR—*Beverly Room*—Frank Deyoe, Chairman.
9:10—Arthur Steinhaus, Ph.D., George Williams College.
9:40—Emmett Brown.
10:10—Karl K. Klein, University of Texas.
10:40—Carl A. Troester, Jr., Executive Director, Associa-
tion for Health, Physical Education and Recreation.
11:10—Robert Shelton, University of Illinois.

11:40—Joseph Van Schoick, Chief Corrective Therapy, Veterans Admin.

AMRDC—Meeting Room 2—William Thiel, Chairman

9:10—KEYNOTE ADDRESS—Harry Elkins.

10:10—Joseph Riley, Coordinator, PM&R, VAC, Wood, Wisc.

11:40—Leonard Heise.

AART—Bel Aire Room—James Lentz, Chairman.

9:15—WORKSHOP ON TREATMENT PROBLEMS—Louis B. Newman, M.D.; Kenneth Paulson; Daniel Fox; Maxwell D. Flank, M.D.; others to be announced.

1:30—GENERAL SESSION—Waldorf Room.

CALL TO ORDER—Edgar Platt, President, AART.

CHAIRMAN — Lowell T. Coggeshall, M. D., Dean, University of Chicago Medical School.

1:50- 2:45—Panel: PROFESSIONAL RELATIONS IN REHABILITATION—MODERATOR—E. B. Whitten, Executive Director, National Rehabilitation Association.

CLINICAL PSYCHOLOGY — Leonard Pearson, Ph.D., Chief Psychologist, Rehabilitation Institute of Chicago.

COUNSELLING PSYCHOLOGY—William Gellman, Ph.D., Executive Director, Jewish Vocational Service, Chicago.

PMRS—Arthur Rodrigues, M.D.; George Walker.

2:50- 3:45—RELAXATION METHODS FOR REHABILITATION—Edmund Jacobson, M.D.

3:50- 4:45 — TREATMENT OF PSYCHOSOMATIC DISORDERS BY HYPNOTHERAPY—William Kroger, M.D.

4:50- 5:00—CLOSING REMARKS — Lowell Coggeshall, M. D., Dean, University of Chicago Medical School.

THURSDAY — July 11

8:30- 4:00—Registration.

9:00—GENERAL SESSION—Waldorf Room.

CALL TO ORDER—Charles Armon, President, AMRDC.

CHAIRMAN'S ADDRESS—Einar Andreassen, M.D., Area Medical Director, VA Area Medical Office, St. Paul, Minn.

9:20- 9:50—ADDRESS—Ralph Crawshaw, M.D., Menninger Foundation.

10:00-10:30—ADDRESS — A.B.C. Knudson, M.D., Director, Physical Medicine and Rehabilitation Service, Veterans Administration.

10:40-11:15—IMPROVEMENT OF PHYSICAL FITNESS IN THE MIDDLE YEARS OF LIFE—T. K. Cureton, Ph.D., University of Illinois.

1:30—SECTION MEETINGS

APMR—Beverly Room—John E. Davis, Sc.D., Chairman.

1:45—WORKSHOP ON TREATMENT PROBLEMS (GM&S, PSYCHIATRIC, NEUROLOGICAL)—Ruben Wasserman, M.D.; Robert Arlen, Vincent Oddo, John Sikich, Corrective Therapists; and others.

AMRDC—Meeting Room 2—Vincent Circhio, Chairman.

1:40—Joseph Van Schoick.

2:40—Russell Williams.

3:10—Al Slicer.

3:40—Frank McCurdy.

4:10-5:10—To be announced.

AART—Bel Aire Room

EDUCATIONAL THERAPY

1:40—Edward Belknap, Chairman.

2:10—Mabel Guilfoyle.

2:40-5:10—To be announced.

MANUAL ARTS THERAPY

1:40—Edgar Best, Chairman.

2:10-3:30—To be announced.

3:40—Ken Paulson.

4:10-5:10—To be announced.

4:15-4:45 DRAWINGS FOR EXHIBIT PRIZES

7:00—BANQUET—Waldorf Room — A.B.C. Knudson, M. D. Toastmaster;

ADDRESS—ROPES OF GOLD—Kenneth McFarland, M. D.

FRIDAY — July 12

9:00—SECTION MEETINGS (Speakers to be announced).

11:00-12:00—PRESIDENT'S REPORTS—ADJOURNMENT.

Scientific and Clinical Conference Committees

Co-Chairmen: Norman N. Tenner; Medard De Rocker

Program

Leon Edman*

Zola Bond

Sig Lillehaugen

Chester Nelson

Thomas Logland

Dr. J. E. Davis**

Dr. Bror Toedsson**

Carl Purcell

William Zillmer

Frank McCurdy

Scientific

Exhibits

Carl Purcell*

Otto Van Brook*

Commercial

Exhibits

Leslie Root*

Kenneth Paulson*

Joseph Riley

George Nash

Publicity

George Nash*

Robert Ryan*

Al Slicer

Marvin Siegel

Vincent Oddo

Francis Luoma

Official

Program—

Hotel Reservations

Charles Armon*

Gordon Bute*

Kenneth Paulson

Medard De Rocker

Registration

Norman Tenner*

Irene Shipley*

Membership

Harry Hicks*

Robert Arlen*

Carl Petersen

Melvin Sader

Reception

Dr. Louis B. Newman*

Dr. John E. Davis*

Dr. Maxwell Flank

Dr. Louis Schwartz

Norman Tenner

John Sikich

Marvin Siegel

Walter Schultz

Banquet

Frank McCurdy*

William Zillmer*

Margaret Fairbairn

Medard De Rocker

Social

Joseph Riley*

Zola Bond

Irene Conte

Paul J. Tourney

Advertising—

Program

Carl Purcell*

Francis Luoma*

Melvin Sader

Jack Klein

Secretary to

Convention

and Finance

Committee

Chairman

Irene Shipley

*Chairman

**Advisory

THE ADAPTED PHYSICAL EDUCATION PROGRAM AT THE UNIVERSITY OF OREGON

MARGARET S. POLEY, PH. D.*

The instructional program in adapted physical education at the University of Oregon can be described most easily by dividing it into the work which is available for any student enrolled in the university, regardless of his major (the "service course" program), and the work which is available for professional students, that is, students who are majoring in health education, physical education or recreation.

THE SERVICE COURSE PROGRAM

Basic Courses in Physical Education

Every student who is enrolled at the University of Oregon is required to take five terms of physical education activity courses and one term of instruction in personal health. One term of the activity courses is usually in basic physical education.

Prior to his entrance to the university each student submits a record of medical examination given to him by his home physician on a blank supplied by the university. This health record is assessed by one of the university physicians and the student is cleared for regular activity or recommended for the adapted program. Following this medical appraisal the student takes a motor fitness or performance test administered by the staff of the School of Health and Physical Education. This test varies somewhat for men and women, but consists in the main of a battery of strength, endurance and flexibility items (for the men, the Roger's PFI battery), a rating of performance in the basic skills of walking, running and jumping, and an orthopedic assessment (anteroposterior posture, lateral posture, and feet). Any student who is medically restricted takes only those parts of the motor performance test which are approved by the university physician. If the scores attained in this test indicate superior ability the student is waived from the basic physical education requirement and is free to elect from sports and dance activities as he desires. Otherwise he is assigned to a developmental or an adapted class (men) or, in the case of the women, to a class in fundamentals of movement (good but not superior scores); developmental physical education (average scores); or adapted physical education (students show need for a particular emphasis

in their exercise programs because of very low scores, very poor posture, severe dysmenorrhea, or need individual help in learning to relax).

During the term all students in the developmental classes are re-assessed regularly and conferences are held with any whose progress is not satisfactory. As a result of these conferences a particular student, if it is deemed advisable, may be transferred to an adapted class. And at any time during the term a student who is unable to continue work in the regular classes because of health reasons or who shows need for individual help likewise may be transferred.

Adapted Physical Education for Women

In the Department of Physical Education for Women the adapted classes mentioned above are regularly scheduled sections, usually five per term in the fall and winter and one in the spring. These classes are kept small (maximum of twelve) and are taught by a person with special training for this type of work. Each girl has an individual program developed to meet her own needs. In case of a structural or pathological condition the girl may bring a set of exercises prescribed by her physician or therapist which she performs under the supervision of the class instructor, or the instructor may develop the exercise program and submit it to the physician for his approval.

In addition to the individual exercise programs, a part of the time in a typical class period is devoted to group work. This may be used for class instruction in relaxation techniques, in the basic skills of walking, running, lifting, carrying, etc., for group exercises, or for recreational games such as shuffleboard, simple relays, floor games, and table tennis. The specific needs, restrictions, and interests of the students in a particular section are considered in the selection of the group work. Although the individual aspects of the adapted program are emphasized in our thinking and planning, it is the belief of our corrective division staff that this group work is very important, since it is here that many a seriously handicapped student has her first opportunity to participate with a group in a physical activity.

After "Adapted," What?

Toward the end of the term, prior to the pre-registration period for the next term, a conference

*Professor of Physical Education; Head, Division of Corrective Physical Education, School of Health and Physical Education, University of Oregon, Eugene, Oregon.

is held with each student to discuss her progress and plan her future participation in activity classes. Sometimes it is considered desirable for her to continue for another term in the basic adapted program. This might be the case, for example, for a student with a severe tension problem who needs a longer time to acquire skill in the art of relaxation, or for a student who is just beginning to make real progress in a stubborn postural problem. The majority, however, change to another activity and for most of these, the second activity is swimming. Some students who are recommended for adapted work on the basis of their entrance examinations take swimming during the first term and the basic adapted course the second term, because of their schedules and the class loads. Those who know how to swim and prefer not to elect further work in it at this time and those who should not take swimming because of a medical limitation (such as inner ear infection or sensitivity to chlorine) may elect from among the other offerings of the department in accordance with their abilities.

All students are urged to take at least one, and if possible, more than one activity which will have carry-over value for them—one in which they develop sufficient skill to assure real pleasure from participation and which may be used for healthful recreation in later years. Students with physical handicaps are given particular counseling in this respect. They need to know just what their limitations are and—often of greater importance—what their capabilities are; and they need to experience a variety of activities in which they may participate safely and with satisfaction. Every effort is made to provide for this. Activities which have been found to be especially good for this purpose in addition to swimming include archery, badminton, bowling, ballroom dancing, golf, small court games, and in some instances, folk dancing, tennis and volleyball.

No special classes are provided for handicapped students in other than the basic course, but in every instance in which a handicapped student is enrolled in an activity, the instructor in charge is given full information as to the nature of the handicap and the degree of limitation; and the student always has the privilege of transferring if the choice is found to have been unwise and she is unable to make the necessary adaptations. However, through a combination of careful counselling, individualized instruction, and fine cooperation between staff and students, transfers are kept to a minimum.

After the student has participated in one or more of the above activities she may elect to enroll again in the basic adapted course. This is especially true of students who need a maintenance program

of specific exercises, as for example, those who have had poliomyelitis. These students sometimes audit an adapted class at the same time that they are enrolled for credit in a dance or sports activity, and occasionally one "takes adapted" every term that she is in college.

The Adapted Physical Education Program for Men

In most respects the adapted physical education program for men is the same as that for women. The major difference is that special classes in basic physical education are provided only for the physically handicapped, and not for the men who are given medical clearance but who make exceptionally low motor fitness scores. The latter are provided for by special counselling procedures within the framework of the developmental classes and by individual help given by senior physical education majors who serve as assistants in the developmental sections. The program for the physically handicapped men is essentially the same as that outlined above for women.

Cooperation with Other University Services.

It was indicated early in the above discussion that the first assessment of each student's physical status is that made by one of the university physicians on the basis of a medical examination. It should be noted here that a follow-up examination may be given at any time that it is felt that one is needed—if a student has been ill; if he is not progressing as well as it is believed he should; if he wishes to take a more strenuous activity than is allowed under his medical classification. There is a very close and very fine cooperation between the Student Health Service and the School of Health and Physical Education, and we can call on the university physicians for help and guidance at all times.

The university also has available for students psychological, vocational and psychiatric counselling services. Students may be encouraged to avail themselves of these services directly through the Office of Student Affairs, or may be referred to them through the Student Health Service; and their advice is sought frequently when working with students who have special problems. This referral service also functions in the opposite direction; i.e., students are referred to the School of Health and Physical Education for a special exercise program or for training in relaxation when the counsellors see a need.

The Corrective Physical Education Clinic

An additional service for students who need special help is provided by the corrective physical education clinic. A member of the correctives division

ion staff is available in the corrective gym three afternoons a week from 4:00 until 5:30 and any student, whether or not he or she is enrolled in a physical education class, may come in for individual help. Students come for many reasons—for exercises to develop strength and/or flexibility in certain parts of the body, to work for the improvement of posture, for training in relaxation, for exercises for the relief of dysmenorrhea or for heat and massage for muscle soreness. Students who have been in an adapted section and are now enrolled in a sport come in to do their maintenance exercises; students enrolled in a developmental section who are not progressing as rapidly as desired come for some extra work. In the early winter many students come for "pre-ski" exercises, and around final examination time a few drop in for some "supervised relaxation."

Attendance at the clinic varies from none to fourteen or fifteen, with an average of five per meeting; and a given student may come just once or may return many times. Often a student is taught exercises during the clinic hour and then she drops in to the gym at her own convenience to work on them, returning to the clinic occasionally for a check on performance or for new exercises.

Probably the majority of the students who come to the clinic do so on the recommendation of their physical education instructor, although it is known that many are referred by fellow students who have received help themselves, by the Office of Student Affairs, and by faculty members from other schools and departments. Some students come of their own accord, having read about the clinic in the Physical Education Handbook or the University Bulletin.

THE PROFESSIONAL PROGRAM

Undergraduate Training

The undergraduate professional curriculum contains a single one term course in corrective physical education, which is required for all majors in physical education and health education and recommended but not required for recreation majors. Prerequisite to the work in this course and basic for understanding it are two terms of human anatomy with a dissection laboratory (human cadaver), a term of kinesiology, two terms of human physiology and a term of physiology of exercise, a methods course in the teaching of fundamental activities, tests and measurements in physical education, and a series of health education courses including personal and public hygiene, communicable diseases, dietetics, and health services (including the interpretation of the physical examination). With this strong background it is possible to give in a single term a course which provides the stu-

dent with the knowledges and skill necessary for developing a good physical education program for students with low-fitness and non-pathological, non-structural posture problems, for adapting the program in the public schools to fit the needs of the handicapped child, for screening cases that need medical referral, and for supervising exercises which have been prescribed by a physician.

This course, which is co-educational, is taught jointly by the writer and by a member of the men's staff*, and consists of lectures, discussion and laboratory (gymnasium) sessions. In addition, each student is regularly assigned as an assistant in a service course developmental (men) or adapted (women) class. His duties in this class include, at first, just careful observation; then later, individual assistance to students who are having difficulty, with a detailed case study of one particular student; and toward the end of the term occasionally handling the entire class. In addition, the student assistants participate actively in the testing sessions. This assistantship is considered as laboratory experience for the course in corrective physical education. It is closely coordinated with the latter in the lecture and discussion sessions, and counts for a part of the final grade in the course.

The Graduate Program

At the graduate level it is possible to place the major emphasis of the program on the area of adapted (corrective) physical education. Two year sequences are offered which are specifically in this field. The first, known as *Corrective Physical Education Studies*, consists of four sequential courses; basic procedures in corrective physical education, advanced corrective procedures, physical education for the handicapped, and developmental physical education. This sequence has an accompanying laboratory assignment which gives clinic experience in the service course adapted classes at the university, in physical therapy departments of local hospitals, and in the physical therapy department of the state school for crippled children, which is located in Eugene.

The second sequence in this area is the *Physical Therapy Studies*, a study of the modalities from physical therapy which may be safely used by the physical educator (and which are taught for use by the physical educator, not the therapist). The specific courses included in the sequence are muscle testing and therapeutic exercise; heat therapy, massage and strapping; and techniques of relaxation. As in the former sequence, laboratory experience is an integral part of the work.

*Dr. H. Harrison Clarke, well-known for his work with the low-fitness individual.

A student placing his major emphasis in the adapted area is encouraged to take further graduate work in anatomy, kinesiology and physiology, and probably will want advanced study in psychology, especially clinical psychology, in sociology, and in various areas of special education. And, of course, his research will be related to this area—and it is an area which is wide open for problems. The University of Oregon is especially well equipped for work in this area. The School of Health and Physical Education itself has one of the best research laboratories in the country, and there are available to its students services from an excellent audio-visual department, and laboratories and consultants from anthropology, biology, psychology, and the University Medical School. A number of very fine studies have recently been completed or are in progress, but there are many more crying to be done. This is, indeed, a challenging field for graduate study.

SERVICES TO COMMUNITY AND STATE

One of the functions of a state university, in addition to the instruction of the students on its campus, is to provide trained services in specialized areas to the citizens of the state. There are a number of such services provided regularly in the area of adapted physical education.

A fairly frequent request is for a member of our staff to visit a school to give posture assessments to the students. This type of request is generally in connection with a special Posture Week or some such occasion. At such a time as this, the opportunity is always taken to make a record of any children who show evidence of an orthopedic deviation which should be referred, and their names are transmitted to someone, usually the school nurse, who is in a position to effectuate the referral. Also, the authorities of the school are urged to arrange a meeting of the consultant with the parents—as many of them as possible, not just the parents of children who have problems—

to explain what is being done and to give them an opportunity for asking questions.

An on-going community service which also serves as an additional laboratory experience for professional students is a swimming class for handicapped children. This has been conducted for a number of years and has proved to be very satisfying. The students give freely of their time but feel that it is very worthwhile.

A state-wide, and this year region-wide, service is the conduct of short-term rehabilitation institutes for the in-service training of both professional and volunteer workers in all areas of rehabilitation. These institutes are conducted under a joint sponsorship with the Oregon Division of Vocational Rehabilitation and the Oregon Tuberculosis and Health Association, and are partially supported by a grant from the United States Department of Health, Education and Welfare. It is the hope of the university that this type of service can be expanded in the future.

In addition to the above types of services for organized groups, members of the adapted physical education staff frequently give time for individual consultation. In fact, it is in this individual work, just as it is in the individual aspects of the adapted program itself, that they feel they make their greatest contribution. It is in this way that they endeavor to fulfill the essential statement from the guiding principles for adapted physical education endorsed by the American Association for Health, Physical Education, and Recreation and by the Joint Committee on Health Problems in Education of the AMA and the NEA: "It is the responsibility of the school to contribute to the fullest possible development of the potentialities of each individual entrusted to its care. This is the basic tenet of our democratic faith."¹

¹"Guiding Principles for Adapted Physical Education," *Journal of the American Association for Health, Physical Education, and Recreation*, 23:4:15, April, 1952.

VA PROSTHETIC EXPERT TO LECTURE IN DENMARK

The Veterans Administration chief of prosthetic research and development, Eugene F. Murphy, Ph.D., will leave for Denmark in July under a Fulbright award to promote exchange of scientific knowledge in artificial limbs. VA said one of his first duties will be lecturing in an international course for doctors, therapists and limb makers August 1-10.

Dr. Murphy, who is stationed in New York City, was notified of the grant by the Department of State. Arrangements had been made with VA to permit his six-month assignment as lecturer and consultant at Denmark's famous Society and Home for Cripples at Copenhagen.

The society, the oldest of its kind in the world, operates orthopedic hospitals and research and clinical facilities throughout Denmark. It also supports an international information center in prosthetics.

The State Department grant was made under the International Educational Exchange Program of the U. S. Gov-

ernment (Fulbright Act). Its purpose is to increase good will and understanding through exchange of students, teachers, university lecturers, and research scholars.

Dr. Murphy, who recovered from polio in his youth to become one of America's outstanding researchers in orthopedic engineering, has been with VA since 1948, guiding the agency's participation in the prosthetic and sensory aids research program coordinated through the National Research Council. He has degrees from Cornell (ME, 1935), Syracuse (MME, 1937) and Illinois Institute of Technology (Ph.D., 1948). Before joining VA, he was on the faculty of the University of California and worked with the Committee on Artificial Limbs of the National Research Council.

A frequent lecturer and contributor to books and journals in his field, he also is chairman of the Editorial Board of *Artificial Limbs*, published by the National Research Council. Dr. Murphy is a member of a number of scientific, professional, and honorary societies.

INDIVIDUAL REMEDIAL PHYSICAL EDUCATION IN THE PHILADELPHIA PUBLIC SCHOOLS

J. N. BRANCATO, D. ED.*

Introduction

Individual remedial physical education recently completed its tenth year as an integral part of the physical education program in the Philadelphia public schools. During that time thousands of pupils have had remediable orthopedic and related defects improved or corrected through a program of special exercises. These exercises are conducted in remedial gymnasiums under the instruction of trained and experienced teachers.

The program is rapidly gaining recognition throughout the country because of its unusual success. As they gain a knowledge of the services provided, physicians are increasing referrals of patients to these classes. Parents have become interested and send letters of appreciation to instructors for the improvement of their children.

Grover W. Mueller, present director of physical and health education in the Philadelphia public schools, described the early history of the program:

Remedial Physical Education is not an entirely new subject in the Philadelphia public schools. It had its inception in the early 1900's when the supervisors of physical and health education gave as much of their time to this phase of the general physical education program as was then feasible. There were no special teachers at that time to do this specific work, and the teaching necessarily was on a group basis rather than on an individual basis. Appreciation is due the early pioneers who recognized the value of such a program and who incorporated it into their teaching. The original spark was fostered down through the years and eventually developed into its present proportions.¹

Originally started as a pilot program in four experimental schools in 1946, remedial physical education has now expanded to include thirty-two schools with full-time services. A number of other schools have partially developed programs. The program is administered jointly by the Division of Physical and Health Education and the Division of Medical Services. It is designed to improve or correct remedial defects such as poor posture, weak feet, weak musculature, poor coordination, dysmenorrhea, post-polio conditions and others.

School medical examinations conducted by the Division of Medical Services revealed that with the

exception of dental caries, orthopedic defects presented the highest incidence of defects recommended for treatment. With the installation of the remedial program, the percentage of defects improved or corrected has shown a steady rise. A recent research study² adds further evidence in a compilation of statistics relating to the improvement and correction of defects among pupils in the remedial program. In all cases the school physician is the final authority as to whether an improvement or correction has been obtained.

Results summarized during a three year period, (1951-1953), showed a total of 20,318 defects recorded in the remedial physical education program (Table I).

Poor posture	42.5
Flat feet	23.3
Overweight	10.6
Dysmenorrhea	10.1
Weak musculature	7.9
Poor coordination	3.1
Heart Defects6
Miscellaneous	1.9

Type and Percentage of Defects Recorded in Remedial Physical Education Program (1951-53) Based on Total of 20,318.

TABLE I

Comparison of defects in girls and boys in the remedial program for the three year period revealed a higher incidence of defects in girls than in boys in four categories: poor posture, flat feet, weak musculature, and overweight. In the remaining three categories—poor coordination, heart defects, and miscellaneous—there were more boys than girls.

Of the 20,318 defects treated in the remedial program during the three year period, 17,124 defects were improved or corrected. This improvement and correction represented 84.2 per cent of the defects treated. The percentage of improvement or correction for each category of defect appears in Table II.

¹Grover W. Mueller, "Program in Individual Remedial Physical Education for Junior High, Senior High, and Vocational-Technical Schools." (*Preface of Syllabus, School District of Philadelphia, Pa.*) September, 1955.

²J. Brancato, "History, Status, and Analysis of a Program of Individual Remedial Physical Education in the Philadelphia Public Schools," (unpublished doctoral dissertation, Pennsylvania State University, State College, Pa., 1954).

*Instructor of Individual Remedial Physical Education, South Philadelphia High School; Instructor, Protective Body Mechanics, Methodist Episcopal Hospital, Philadelphia, Pa.

Poor posture	90.4
Flat feet	82.5
Overweight	72.6
Dysmenorrhea	78.2
Weak musculature	84.5
Poor coordination	83.9
Heart defects	62.3
Miscellaneous	70.9

Percentage of Improvement or Correction of Defects in Remedial Physical Education Program (1951-53)

TABLE II

Enrolling of Pupils in Classes

The enrolling of pupils in remedial classes depends upon examination and selection by the school physician. These recommendations are made after the completion of the physical examination of each pupil, as required by the Pennsylvania School Health Act. Medical examinations are required once every two years. When remedial defects are discovered, the physician makes appropriate entries on an evaluation form which includes a list of specific defects which can be easily checked. Under the heading of "Recommendations" there is a space for the physician to indicate the cause of the defect. He may also recommend measures for removal of the cause and improvement. The completed diagnostic forms are sent to the remedial teacher, who uses them as the main source from which to select the cases to be sent to his classes.²

Pupils may also be referred to the school physician for screening by the physical education teachers or by classroom teachers whenever serious defects come to their attention. The family physician or parents may also submit requests for a pupil to be enrolled. In all cases, the school physician makes the final decision as to the enrollment of the pupil.

Basic to the effective adaptation of the remedial program to the particular needs of a pupil is the pupil-teacher conference. Each teacher has time allotted in the daily schedule for this purpose. The teacher attempts to develop the proper attitude in the pupil so that he can understand the opportunity for the improvement of his defect. Enrollment in the class is made on a voluntary basis as it is important that the pupil be willing to participate. The teacher also uses the conference period to talk to parents, other faculty members, the school nurse and physician, and to do necessary planning.

Parental permission is secured by letter. The parent is usually advised of the recommendations and the need for home practice of exercises. A letter is also enclosed for information of the family physician. Roster adjustments in the pupil's schedule are frequently made, if necessary.

Organization of Classes

Wherever possible, classes are organized so that

pupils with similar defects are grouped together. Pupils grouped in such classes share similar problems; often they may work in small groups assisting one another. The teacher moves from one individual to another, or from one group to another, giving individual attention wherever it is necessary. Classes are kept small to permit this individual help. An average class includes from ten to twelve pupils, and usually no more than fifteen.

Classes conducted on an individual basis become interesting and purposeful. The teacher selected must have adequate professional preparation, interest, and experience. He must usually possess the type of personality that will foster cooperation on the part of pupils and others concerned with the program. The instructors selected are friendly, stimulating, and encouraging. Evidence of their interest is that a number of motivating devices have been constructed for use in classes. Some of these measure postural deviations; others aid in stretching or strengthening muscle groups in the exercise program. Instructors also use games that aid in correction of defects as well as to provide stimulation and appeal.

The Program

The instructor and school doctor select the specific activities and exercises for each pupil from a syllabus which has been mutually prepared and approved by the Division of Physical and Health Education and the Division of Medical Services. Much time has been spent in analyzing these exercises for specific conditions and only approved exercises are used by the instructors. Scoliosis cases are excluded with the exception of those specially selected by the school, family physician, or orthopedist.

To help develop and maintain interest many types of evaluation are used. These include taking measurements, posture pictures, physical ability testing, footprints, and many other concrete methods of pupil progress. This information is filed in the pupil's permanent record envelope and used for reference purposes.

The teacher endeavors to be as painstaking as possible in his instruction. Exercises are taught carefully. Contraindications if any are always noted. A daily period of classwork is encouraged until the pupil has made considerable progress.

Re-examinations of pupils, usually at the end of the term, are made at the request of the remedial physical education teacher. Many school physicians visit the remedial room at more frequent intervals to

²Grover W. Mueller and Dorothy R. McQueen, "Individual Remedial Physical Education," *The Physical Educator*, 9:70, October, 1952.

aid in evaluation of pupils. When the physician re-examines the child he notes on the special form if the child has been improved or corrected; whether exercises should be continued or when they are no longer needed. He also indicates whether the pupil be dropped from the class or continued for a longer period of time. In some cases when the defect does not respond to remedial exercises the pupil's attendance is discontinued. In all cases on dismissal, the pupil's evaluation form is filed with the rest of his medical records.

The administering of tests for evaluating muscle strength and muscle length to the pupils aids greatly in the selection of specific exercises. These include tests for normal length of back extensors, hamstrings, and gastroc-soleus muscles; also tests for normal length of hip flexor muscles and for abdominal strength.

In assigning exercises for specific defects the teacher adapts the exercise to the ability of the pupil. In the beginning, exercises are made simple until the pupil develops sufficient strength and skill. The number of repetitions and the amount of resistance is increased gradually during successive periods according to the ability and needs of the individual.

Training of Remedial Physical Education Teachers

Teachers selected for service in the remedial program are directed by the supervisor of individual remedial physical education. The supervisor works closely with the beginning teacher when the remedial program is introduced in a school. Periodic visits are made to each school with on-going programs. As part of a city wide "in-service" program for teachers, the Division of Physical and Health Education sponsors courses in the teaching of remedial physical education. Attendance at these basic and advanced courses is required for new personnel in the remedial program. Periodic meetings are held for remedial teachers. During these sessions new procedures and techniques are developed; more research is done in specialized areas;

articles and new literature in the field are discussed. Selected films and film slides are available to each teacher. A basic group of texts is provided each teacher as a selected library of reference. Opportunities are arranged for observation in other schools as well as visits to orthopedic clinics. Assistance is given each teacher by the school physician and nurse. Close teamwork of the personnel involved in the remedial program contributes greatly to its success.

Facilities and Equipment

The School District of Philadelphia supplies the basic equipment to all schools that enter the remedial program. Included are stall bars, a full length three-way mirror, gymnasium mats, a posture grid, foot mirrors, and a foot exercise board. Additional equipment is provided as it becomes available. The remedial room must be of adequate space, well-lighted and with good ventilation. Many new buildings now being constructed are being provided with remedial gymnasiums that conform to specified standards.

Public Relations

Informing the general public, parents, and physicians about remedial physical education has been a large factor in its success. Administrators and remedial teachers have participated in parent-teacher meetings, radio and television programs, health fairs, convention meetings, and numerous other activities. In addition, feature articles in Philadelphia newspapers have served as favorable mediums of publicity.

School systems in other cities have sought assistance in establishing similar programs in their own schools. Many visitors have observed remedial classes in action.

The contemplated expansion of the program in the Philadelphia Public Schools speaks well for the future of individual remedial physical education. It has sold itself through practical results, and is undoubtedly one of the most important steps taken by schools in meeting the need for correction of individual defects.

DR. LOUIS B. NEWMAN HONORED

Dr. Louis B. Newman was the recipient of the Distinguished Service Award for 1957 from the Illinois Institute of Technology Alumni Association "in recognition of his exceptional services to the fields of science and medicine and in appreciation of the honor which those services have brought to the Illinois Institute of Technology and the Alumni Association." The award was presented at the annual meeting of the Alumni Association in Chicago, May 3. Dr.

Newman, who is Chief, Physical Medicine and Rehabilitation Service at the Veterans Administration Research Hospital in Chicago and Professor of Physical Medicine at Northwestern University School of Medicine received a degree in Mechanical Engineering before entering the field of medicine. He is a member of the advisory board of the Association for Physical and Mental Rehabilitation and last year won that organization's John E. Davis Award.

ADAPTED PHYSICAL EDUCATION PROGRAM FOR MEN AT THE PENNSYLVANIA STATE UNIVERSITY

ELMER A. GROSS, ED. D.*

EARNEST E. BAER, M. ED.**

Value of the Adapted Physical Education Program

The principal objective of The Pennsylvania State University is "to contribute to the education of the whole person, so that he may be effective as an individual, as a participating member of his family, as a member of his profession, and as a person responsible to his community, his nation, and to mankind". To be included in the course offerings of a university, a subject must be of some value in helping the students achieve the aim or principal objective of the institution. Physical education is accepted as an important part of the educational picture at Penn State because, in this area, an "attempt is made to foster opportunities for the development of the whole personality of the students with major emphasis on those aspects of functional effectiveness which have to do with physical vitality, emotional stability, personality expression, and social adjustment". The acceptance of physical education as an integral part of the general education of non-handicapped college students is an established fact. But what is being done, in physical education, for those students with disabilities? Surely their physical, psychological, and social development needs are as great as, or greater than, similar needs of typical or average students. Penn State University has attempted to fulfil its obligation of providing opportunities in physical education for almost *all* of its handicapped students by offering an adapted physical education program. In this program diversified activities are offered to help develop to the fullest those abilities that the atypical students possess in terms of their individual needs, interests, and limitations. In line with the main objective of the university, the adapted physical education program aims ultimately at the development of the handicapped student for a full life within the limits of his physical talents.

Assignment of Students

One of the purposes of the medical examination is the discovery of handicapping conditions in the students. At the beginning of each academic year, the physicians in the Health Service of the university examine all incoming freshmen students. Those stu-

dents who have physical defects that prohibit them from enrolling in the regular physical education program are informed that they must register for Physical Education 10 (adapted physical education course). Upperclassmen who had previously been in the adapted program and have not completed their physical education requirement for graduation[†] must undergo another physical examination if their previous excuse from regular physical education has expired. The instructor of the adapted program makes a special effort to be present at the time of the examinations so that he may make notes concerning the defects of the students whom the physician assigns to the program. Approximately 2,300 male students are examined during the orientation week (the week before school starts in the fall). Although many doctors do the medical examining, one doctor has the specific task of looking over the medical record of the student and deciding, with the help of the student and the adapted physical education instructor, whether the student should or should not be placed in the adapted program. The physician also may recommend the types of activities or exercises that are suitable for the alleviation of certain defects.

During the semester, there are students who are registered in the regular physical education program who become temporarily disabled (sprain, fracture, postoperative, etc.). Upon recommendation of the physicians at the University Health Service, these students are placed in the adapted program. They remain in this program until the Health Service releases them to their regular physical education classes.

Types of Defects

Of the approximately 4,400 male freshmen and sophomore students who were required to take physical education in the fall semester of 1956, approxi-

*College of Physical Education and Athletics, The Pennsylvania State University.

[†]Two years of physical education are required of all Penn State students before they graduate.

[‡]*Revised Report of the Senate Committee on Educational Policy* approved and accepted by the Senate of The Pennsylvania State University on December 2, 1954.

[§]*Report Submitted to the Educational Policy Committee of The Pennsylvania State University by the College of Physical Education and Athletics, December 4, 1953 (unpublished).*

mately 125 or 3% of them were assigned to the adapted physical education program. An analysis of the records kept on the types of defects of handicapped students in the adapted program during the last five years reveals the following percentages: circulatory disturbances, 18%; postoperative (including hernia), 17%; back disabilities (mostly low back pain) and spinal curvatures, 12%; dislocations and sprains, 11%; bone fractures, 8%; poliomyelitis (post), 5%; allergies and asthma, 4%; foot conditions, 4%; poor eyesight, 4%; joint disabilities, 3%; amputations, 3%; diabetics, 2%; tuberculosis (post), 2%; one kidney, 2%; ulcers, 2%; glandular disorders, 1%; sinus, 1%; others, 1%.

Orientation Meeting for All Students in the Adapted Program

The Schedule of Courses* issued by the university informs all students assigned to the adapted physical education program that they are required to attend an orientation meeting conducted by the instructor-in-charge of the program. The date, time, and place (usually the first day of school, at 5:00 P.M., at the gymnasium) are established by the university scheduling officer as recommended by the head of the required physical education department. The purpose of this meeting is to complete the following administrative and organizational tasks:

1. *Roll.* Roll call is held using the official registration cards to determine whether all the students who registered for the course are present or not. Each semester there are approximately 125 men enrolled in the adapted program. If there are students who are absent, an attempt is made to contact these people by telephone as soon as possible.

2. *Orientation.* An overview of the adapted program is presented. The purposes, objectives, activities, and evaluation procedures which have been in use are explained to the students. The students are given the opportunity to make recommendations for altering, changing, or improving the program.

3. *Medical Examination Forms.* As a result of the medical examinations conducted by the physicians of the University Health Service, each student should have in his possession a medical examination form indicating his physical condition and permitting him to enroll in the adapted physical education program. Each student hands this form to the instructor-in-charge of the program.

4. *Adapted Physical Education Form.* Each student is given a form on which the following information is requested. These forms are filled out by the student under the supervision of the instructor.

- a. The student's name, campus address, phone number, college, curriculum, semester, height, weight, and age.
- b. His condition and its general nature.
- c. The date of the original occurrence of the defect, if known.
- d. The treatment received thus far.
- e. The physician's recommendations and present treatment.
- f. Recommended adapted sports and/or corrective exercises.
- g. Cumulative record of adapted physical education activities taken to date.
- h. Additional comments.

The preceding information is gathered in an effort to help guide the instructor in planning and supervising an adequate program for each student.

5. *Schedule Card.* Each student must fill out a schedule card indicating all the other courses for which he has registered. Three suitable class hours per week are selected on different days for the student's adapted physical education program.

6. *Individual Conference.* An individual conference is arranged with each student during the first week of the semester in order to establish his program and class hours. The medical examination form, the adapted physical education form, and the schedule card are reviewed with the student during the individual conference and the following items in his program are arranged:

- a. The dates, times and places of the student's classes in adapted physical education.
- b. The adapted sports and/or corrective exercises suitable for the physical, psychological, and social development of the student and for the alleviation of his handicap.
- c. The name of the student's instructor.

Activities Available

The activities included in the adapted physical education program are dependent upon the kinds of defects that are found among the students. As many activities as possible that meet the needs, interests, and capabilities of the atypical students are offered in the program. In each activity offered a syllabus has been prepared which includes: (1) the objectives for the activity; (2) course content; (3) suggestions on appropriate teaching and motivating techniques; (4) suggestions on testing and measuring the results of the teaching; and (5) adequate reference materials. Some of the activities offered are: archery, badminton, bait casting, boomerang throwing, box hockey, (standard and table), bowling, croquet, duck pins, floor tennis, fly casting, golf, hand-

*The *Schedule of Courses* or *Time Table* lists all the courses offered at Penn State for a certain semester with the hours during which the classes meet, the rooms or places where the classes meet, and the names of the instructors.

ball (doubles), horseshoes, hunting safety, horseback riding, shuffleboard, sports orientation, squash, swimming, table tennis, tennis, and tether ball. Special exercises are given to those handicapped students who desire them and whose conditions are such (postoperative, etc.) that special exercises will benefit them. The special exercise room contains the following equipment: bar bells and weights, chinning bar, hand exercisers, mats, overhead boom for weights, plinth, pulley weights, rowing machine, shoulder wheel, stall bars, stationary bicycle, wrist roller and wrist rotator, and a variety of equipment used for special cases. At convenient places in the exercise room many sets of exercises are posted on bulletin boards as guides for the development or exercise of any specific body part. These exercises are numbered, and the handicapped student is given the numbers of the exercises which are considered suitable for him.

Choice of Activities

Each handicapped student is permitted to choose the activities and sports in which he desires to participate provided that these activities have been approved as beneficial for his condition. Therefore, during the individual conference which the adapted physical education instructor has with each of his handicapped students, the student may be placed in suitable activities in the regular required physical education program. Such activities as fly casting, bowling, and swimming, which are included in the regular physical education program, are open to those handicapped students who express a desire to participate in them. Supervision over the handicapped students in these regular physical education activities is maintained by the instructor-in-charge of the adapted program; however, the atypical student is under the control of his immediate activity instructor for the purpose of instruction. Each regular physical education instructor who has atypical students in his class is furnished with the necessary information concerning their defects and also cautioned about the specific movements which are contraindicated for his handicapped students.

The majority of the atypical students are assigned to activities in the adapted physical education program. They are under the supervision of the adapted physical education instructor who organizes and teaches the program of instruction. The handicapped students soon learn that the adapted physical education classes are conducted much more informally than regular classes. The small classes (10-20 students) are conducive to friendly relationships. Rules and regulations are minimal, and the welfare of the student is given prime consideration. Some stu-

dents may be permitted to leave class early because of the nature of their conditions, and other students may be encouraged to rest. The instructor knows each student in his classes; his physical condition, his limitations, his capabilities, and his needs. Special exercises are provided for those students who desire and need them. Activities and sports are selected which are adapted to a majority of the students for a particular class period. Suitable individual activities are arranged for those students who can't participate in the main activity of the period.

Class Procedure

The class procedures for the students in the adapted physical education program are established by the instructor and include the following details:

- a. An accurate attendance record is maintained.
- b. All students are instructed in the safety precautions to be observed in the various activities (archery, darts, etc.).
- c. Each activity and exercise is demonstrated by the instructor. The student is informed as to what extent his defect will permit his participation in the selected game or exercise. Rest periods are provided during activity time for those students who require them.
- d. A student's grade is determined by how well he achieves his objectives for each activity taken. In general, his grade depends upon how much his condition has improved or, if his condition is of a permanent nature, how well he has adjusted to his environment. A written test on his knowledge of rules and strategies, of each activity is given. An achievement test to determine his ability to play the game is frequently included in the grading plan. Finally, a written report by the student on any phase of his condition or on his ability to live most effectively within the limits of his disability has an influence on his grade.
- e. The student's *Adapted Physical Education Record Form* is utilized frequently to record progress and other information.
- f. The physicians in the University Health Service are consulted if any unusual situation occurs regarding a student's handicap.

One must remember that the offering of numerous activities does not guarantee developmental, adjustment, recreational, and social values accruing to the participator. These values are not inherent in activities. Activities have been taught or engaged in whereby very little benefit was derived. The instructor has an important role to play in helping the students receive maximum benefits from their participation through demonstration and explanation.

Evaluation of Student Progress

The progress of the handicapped student is judged in terms of the purposes and objectives established for each individual student. Single standards or absolute standards are not used in determining the handicapped student's achievements for this reason:

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EXERCISES TO INCREASE FLEXIBILITY

C. H. McCLOY, Ph. D.*

Many persons are aware of the need for exercise to increase strength and to stimulate the vital organs to improved function. They have learned that "they feel better" if they take some regular exercise. Many fewer persons realize how much improvement in the feeling of well being can come from increasing the flexibility of their bodies. One not only moves more easily—but he is also often relieved of many chronic aches and pains as a result. The following exercises are offered as a means of increasing one's flexibility.

These exercises should be taken after a period of warming up—preferably after taking one's daily exercise. All except exercises number four and six should be done slowly and forcefully, and *repeated at least three times each* (five or six will be better), pressing to near the limit of movement—into "the twilight zone of pain" if necessary. In exercises number four and six, the arms are swung fast and hard in the indicated directions, and with an attempt being made to let them go to the limits of movement without restraint. Take it easy at first: increase range and forcefulness of movements gradually. After about three weeks, you can usually push the exercises strongly.

It usually requires from ten to twelve weeks to secure the desired results. After that, doing these exercises once a week is usually sufficient to retain the flexibility.

1. Sitting or standing erect, the right arm is raised sideward and upward, and the right hand is placed over the top of the head. Leaning trunk to left, with right hand pull head and neck to the right as though trying to touch the right ear to the right shoulder. Do *not* incline trunk to right. With left hand over top of head, do same exercises to opposite side.

2. Keeping shoulders squarely to the front, place right hand on left side of face, and twist head and neck as far to the right as possible as though trying to look down the right side of the back. Do same exercise to opposite side. NOTE. These two exercises (adapted from Billig) within a couple of months will frequently relieve chronic basal headaches.

3. Stand in frame of open door, arms over head, hands (or arms) touching top of door frame (or sides of door, if arms do not reach the top). Without bending trunk back at the hips, sway the trunk forward, forcing arms upward and backward, inhaling deeply at the same time.

4. Swing arms hard from a position parallel to the floor in front of shoulders sideward and backward as far as possible. (As an alternative exercise, hold a piece of rope about six feet long in the hands, and with arms straight swing it over the head to behind the shoulders. Hold rope shorter and shorter as flexibility of shoulders increases.)

5. Stand with feet slightly apart. Right fist is placed against hip just behind hip joint. Bend strongly sideward to right, swinging hips forward and sideward to left, pressing against right hip with right fist. Do same exercise to opposite side.

6. Sit on floor, legs straight and apart, arms raised sideward parallel to floor. Swing arms and rotate trunk forcibly to right as far as possible. Do the same exercise to opposite side.

7. Sit on floor, keeping knees straight and together in front of hips. Bend trunk forward as far as possible and try to reach beyond the toes with the hands.

8. Lie on back, legs straight. Push right heel downward hard past the left heel, then reverse, pushing the left heel down past the right heel. Continue to alternate. This exercise will frequently relieve sacroiliac pain.

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THE ADAPTED PHYSICAL EDUCATION PROGRAM IN THE WEYMOUTH (MASS.) SCHOOLS

LEO A. HAYES, M. Ed.*

INTRODUCTION

Prior to September 1946, the physical education department at Weymouth (Mass.) High School faced the problem that its program for boys was not satisfying the needs of all the types of boys for whom it must provide. The situation was that the program in operation offered uniform training to all boys alike when in fact the needs of many boys were quite special.

It was found that each class brought in its proportion of boys with particular defects, such as postural abnormalities, weak musculature or obesity, whose remedy required special attention for which no provision had been made in the regular program. In order that the individual developmental needs of all boys might be met more effectively the physical education program was expanded during the school year 1946-47, and a supplementary program was inaugurated.

The objectives of the newly instituted activities were primarily corrective, but included muscle conditioning and development for such purposes as out-of-season conditioning and body building. The activities can be divided into three categories all having different purposes: (1) corrective physical education; (2) physical conditioning of athletes; and (3) general training program.

To achieve these objectives, a wide variety of exercises was assembled. However, particular emphasis was placed upon exercises utilizing barbells and dumbbells in order to obtain controlled progressive resistance, a requisite for precise muscle development.

CORRECTIVE PHYSICAL EDUCATION

The program for corrective physical education was set up to treat the particular defects of atypical individuals. The objectives of the program fell into four general groups corresponding to the common types of disabilities found among boys; (1) postural deviations, (2) weak musculature, (3) obesity, and (4) reconditioning.

Postural Deviations

The direct aim of this phase of the program is the

application of exercises based up anatomical and physiological principles for the prevention or arrest, relief or correction of some definite functional disability or deformity. The particular faults which this program was designed to alleviate are the antero-posterior defects, kyphosis and lordosis; lateral curvature of the spine, scoliosis; and dropped shoulder, jutting head, funnel chest and chicken breast.

During the first few days of the school year, every boy in the entering class is given a complete medical examination by one of the school physicians. As a part of the examination, the doctor notes all defects which could be aided through special exercise. These boys are assigned to special classes and a more complete study of each case is made to determine causes. Exercises suitable to the particular defect are prescribed and are practiced twice weekly under the supervision of an instructor.

For faulty curvatures of the spine, the prescribed exercises consist of movements designed to elongate shortened muscles and to correct the faulty reflex that has allowed the opposing muscles to remain habitually in too great an elongation. Since each case is handled individually it is impossible in an article of this length to give a complete description of the exercise routines. The discretion and experience of the instructor are important factors and adjustments and changes are made in the patterns of exercise as the weeks go by. This is because all bodies do not respond in the same manner to a specific exercise routine. However, some of the basic movements in the treatment of kyphosis include shoulder shrugs, wrestler's bridge with a pull-over, bent position rowing motion and the military press. Some exercises for a left dorsal scoliosis are one-arm presses with the right arm, shoulder shrugs with the right shoulder, and trunk rotation. Exercises using all of the upper back muscles, such as a military press, are used in bringing the spine into proper alignment, aiding in the alleviation of scoliosis.

In dealing with funnel chest and chicken breast, the objective is to minimize the condition by enlarging the chest cage and developing the muscles surrounding it. Exercises such as pull-overs, lying presses, and the supine lateral raise are used to accomplish this purpose.

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During the workout period when the muscles involved in the prescribed exercises are fatigued, other exercises are performed. These are expected to contribute to an improvement of general body contour. Care must be taken to avoid exercises which will offset the effect of the prescribed exercises.

Weak musculature

Another type of disability for which the corrective program is designed, is deficiency in muscular strength. Normal muscular strength is so important to the successful performance of almost all physical activities, that building up strength is considered the prime responsibility of physical education where strength is found to be below normal. Experience has proved that boys with inadequate muscular development are incapable of making progress in the gymnasium classes since performing skills on parallel bars, horses, rings and other apparatus, require that one have at least the strength to handle one's own weight.

For these reasons, abnormally weak boys are entered in special strength building classes, until they are built up to the point where they are able to take part in the regular gymnasium classes profitably. The boys scheduled to these classes are screened out by simple strength tests given at the beginning of the school year. Barbell and dumbbell exercises involving all of the major muscle groups are given twice a week to these boys in order to promote overall muscular development.

Obesity

Aesthetically and physiologically, overweight is an undesirable condition as well as a hindrance to efficient physical performance. One of the objectives of the remedial program is to reduce the weight and increase the strength of boys who are obviously fat and flabby. Although many boys are overweight according to the height-weight tables, no attempt is made at weight reduction of all who register above average. Individual differences in physical structure are considered. Boys who are placed in the weight reducing group are selected solely on the basis of their appearance. If they look too fat and their muscles appear too flabby, they are given special attention. A mimeographed copy of general dietary recommendations is given each individual, and heavy resistance exercises are prescribed. The purpose is to reduce weight while simultaneously increasing strength through exercise.

The program of weight reduction gives the most spectacular and the most measurable results. We have seen many boys lose as much as thirty pounds in a single school year. One boy lost sixty-five pounds in a year and one-half. Except in rare instances, we meet

with success in the treatment of overweight cases.

Reconditioning

In order to insure a total coverage of those in need of physical re-education, it is necessary to include convalescent boys in a corrective program. Each year a number of boys undergo prolonged periods of inactivity owing to operations, serious illnesses, or injuries. Rather than to return immediately to the vigorous activity of the regular gym classes, these boys are required to go through a period of reconditioning which consists of exercising with light weights using a wide variety of movements involving all of the major muscle groups. These individuals work at a leisurely rate for four or five sessions whereupon the tempo is progressively increased until their physical condition improves. This plan is considered more sound from the physiological point of view than the alternative possibilities of thrusting these pupils into a highly active gym class immediately following a long period of illness, or, of excusing them from participation altogether and thus encouraging further muscle weakness.

Determining the extent of reconditioning before returning the boy to class work is left to the discretion of the instructor. Whenever the instructor feels that the pupil can keep pace with his classmates, he is returned to class work.

Typical corrective classes

An examination of a typical corrective class would reveal a variety of abnormalities represented. It would be impossible to schedule according to each abnormality, because different curricula preclude getting boys of a single type to comprise a corrective class. The diversity of abnormalities does not create any hardship. Each boy works by himself on his own series of exercises. The instructor moves about offering suggestions and making observations of progress.

Out of Season Conditioning Program

At Weymouth, many boys were found to be participating in only one sport during the year and between seasons they were relatively inactive. It was felt by the coaching staff that the best interests of these boys would be served by keeping them in condition during the off-seasons. Football, in particular, was a primary concern because in this sport boys must face the shock of violent physical contact. To play football, not only skill and agility are required but strength and good physical condition. It was believed that rather than to rely on football training to provide conditioning, the athlete should be in condition for football training.

No special classes are set up at Weymouth devoted exclusively to conditioning athletes. The school

authorities felt that it would not be sound policy to have the school time of an instructor taken up just for conditioning varsity athletes. It is, nevertheless, possible to provide activity each year for a great number of team candidates. A large proportion are accommodated by permitting them to work out in remedial classes that are not filled to capacity. Others work after school with the body building club. A few of the more responsible boys are permitted to work by themselves when the special exercise room is not in use.

An exercise routine, mostly with weights, involving all of the muscle groups is followed for the purpose of general conditioning. Special emphasis, however, is placed on exercises which will help the individual in his particular sport. For example, basketball players will do more lying presses to develop triceps, pectorals, serratus and deltoids—muscles involved in passing and shooting. Football players will do a great many deep knee bends to develop the quadriceps muscles of the legs and exercises such as a half snatch which involves the muscles used in a defensive charge as we teach it. Baseball players, to strengthen muscles used in throwing, emphasize pullovers to develop the pectorals, latissimus, serratus and deltoids. Shot putters and pole vaulters work hard on the muscles of the arms and shoulders.

Body Building Club

The special exercise room at Weymouth will accommodate safely no more than 16-18 boys at a time. The number of classes being held are adequate to take care of all those for whom special exercise is prescribed. However, there are a large number of boys in the school who express the desire to work with the weights to gain more strength and to develop better body symmetry. To enable these boys to achieve their wishes, a body building club was organized as an after-school activity. The special exercise room and the equipment is placed at their disposal, and an instructor is on hand to offer advice and to see that safety measures are observed.

This program operates on a very informal basis. Those participating are allowed to come and go as they choose and to work as hard or as little as they please. The response has been gratifying. A large number of boys work out regularly and the results in terms of strength and physical fitness have been eye-opening.

ORGANIZATION OF THE ADAPTED PROGRAM

There are two instructors in charge of the boys physical education program at Weymouth High School. The first month of each school year is a period of organization. It is during this time that the boys in need of special exercise are screened. An analysis of the physical education schedule, with the names

of the corrective cases removed, will show the classes varying in size. There are thirty class periods a week, and by a little schedule adjusting a program is established wherein sixteen of the classes are large and fourteen are small.

During the larger classes the two instructors work together conducting a routine physical education class. The smaller classes are handed by one man, and it is during these periods that the corrective classes are conducted by the other instructor. This, of course, necessitates adjusting of the individual programs of the pupils involved to fit their physical education time into periods that include corrective classes. This may sound difficult, but with sufficient juggling the procedure always works out satisfactorily.

This means that before and after all classes there are two instructors to supervise locker rooms, showers, corridors, and to settle problems. In all of the large classes there are two instructors in attendance. During fourteen of the thirty class periods, a physical education class will be conducted by one instructor, and in the special exercise room a corrective class will be under the supervision of the other instructor.

In screening the classes, boys who should be taking special exercise are occasionally overlooked. This is particularly true of the sub-strength cases. They manage to pass the simple strength test, but when they are required to perform on heavy apparatus the inability to handle their own body weight effectively becomes apparent. Whenever this occurs the pupil is immediately transferred to a remedial group.

Preliminary Considerations

As stated previously, most of the exercises used in the adapted program involve the use of barbells and dumbbells. There are other exercises employed using body weight and muscle stretching. However, we feel that the unique contribution of our program is in the use of weights for the purposes described. Our procedure and philosophy, after eleven years experience with this program, has many differences as well as similarities to other special exercise procedures.

Before beginning to exercise with barbells and dumbbells, the proper weight and the proper number of repetitions must be determined. There are many different opinions regarding this matter because no scientific method of resolving it has been found. At Weymouth, after giving the matter great consideration, and trying several methods, the following policy was adopted and has proved satisfactory.

The strength of each individual is determined by having him try out different weights on each exercise he is to perform. He is expected to repeat each exercise to a point where the last repetition is performed

with great effort. This is in keeping with the overload principle which means taxing the muscles to maximum performance level. The weight decided upon is that which will tax the muscles after about ten repetitions.

Ten repetitions was selected on the assumption that any weight a boy can lift ten times is not beyond his capacity, and, at the same time would be sufficient to challenge his muscles. Weights which can be handled for a large number of repetitions consume too much time and tend to build endurance rather than strength.

To avoid stiffness, the first two or three periods should consist of light exercise but with consideration given to all of the major muscle groups. However, once the body is conditioned to the use of weights, each exercise is performed until the muscles fail to respond. This approach is different than that of specifying a certain number of repetitions for the performance of each exercise.

Many people, even physical educators, believe that there is an element of danger in the handling of barbells and dumbbells. This is true, but it is not the danger that these people fear. At Weymouth, after dealing with nearly two thousand boys utilizing weights, we know that the danger is not that of strains or hernias but rather that of accidents. We have managed to go eleven years without a hernia, a serious strain or an accident. However, we are very much aware of the possibility of accidents.

Since the inception of the program we have very carefully observed the following safety precautions:

1. Boys are not permitted feats of strength in which a single strenuous effort is applied to a heavy weight. The danger is in losing control of the weight and falling with it.
2. No competition is permitted either in regard to weight or repetitions.
3. Adequate space between boys is required.
4. Special care is taken to see that no boy performs a standing exercise near another boy doing lying exercises.
5. Boys doing deep knee bends with a barbell on their shoulders must have an instructor or some appointed individual standing in front of them to guard against falling forward.
6. Unnecessary walking around the room is discouraged.
7. Equipment not being used is never permitted to lie around the floor. When not in use, barbells and dumbbells must be returned to the rack.

EXPANSION OF THE PROGRAM

The alleviation of many defects is a slow and lengthy process. When the Weymouth schools changed

from an 8-4 to a 6-3-3 system the loss of freshmen was felt in the remedial program, which at that time was confined to high school boys. When Mr. Jack Fisher joined the Weymouth staff as director of physical education, he was impressed by the success of the adaptive program for boys operating in the high school. One of his first major acts was to expand the program to include the junior high schools. At the present time Weymouth schools are attempting to meet the individual needs of all boys from grades 7-12.

CONCLUSION

Although the overall results of the Weymouth program are not capable of precise scientific measurement, certain conclusions and many findings, based upon observation of the eleven year program are warranted.

From the standpoint of interest the program works extremely well. In the corrective phase, boys with defects and disabilities, for the most part, recognize their own limitations and do not object to segregation, but rather appreciate the special attention given them.

Because no exact measuring devices are available for the purpose, the extent to which posture is improved cannot be stated. However, there is no question that improvement takes place because it is apparent to the eye. It has been found that kyphosis and flat chest can be corrected in most instances, given enough time and the full cooperation of the pupil. Chicken breast has been corrected at least to the point of no external evidence. Scoliosis, dropped shoulder and jutting head must also be included in the list of abnormalities which will succumb to determined exercise.

The two abnormalities which have given the greatest difficulty are lordosis and very pronounced funnel chest. Although on occasion these conditions have been alleviated, the overall results have not been as satisfactory as with the other postural deviations. It must be pointed out that the same degree of success is not achieved in every instance. In this type of work, as in everything else, you get out of it what you put into it.

Many case histories could be described to substantiate a claim of success in this approach to corrective physical education. One of the most interesting concerns a boy who entered the freshman class weighing two hundred and thirty-four pounds. At the end of the school year, ten months later, he weighed one hundred ninety-eight pounds, a loss of thirty-six pounds. During the summer he was stricken with polio and although non-paralytic his muscles became

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DO MECHANICAL VIBRATORS TAKE OFF OR REDISTRIBUTE FAT?

VERNON HERNLUND, M.S., M.P.E.*

ARTHUR H. STEINHAUS, Ph.D., M.P.E.*

Some years ago we conducted a bit of research which at the time seemed of insufficient moment to report to a larger audience. Today in the light of an obviously heightened interest in various so-called effortless methods of weight reduction, it appears appropriate to publish a brief resume of our findings.

The study was an attempt to determine the validity of the weight reducing claims made for mechanical vibrators as commonly used in health clubs and gymnasiums. If fat is oxidized the oxygen consumption should be increased. If it is "massaged away" in some manner, there should be some trace of it, sooner or later, in the blood.

Thirteen men, some markedly overweight, were subjected to a fifteen minute period of continuous vibration of a most vigorous type with the belt placed around the abdomen. By means of a standard closed circuit Benedict type of metabolism apparatus the oxygen consumption was determined (1) while sitting at rest, (2) while standing and being vibrated for fifteen minutes, (3) throughout the recovery period. From these data the excess oxygen consumption attributable to the standing and vibrating was calculated. It was found impractical for the comfort of the subject to extend observations to lengths necessary to determine the "oxygen cost" of standing and of vibrating, separately. By employing a modified form of the Stoddard and Drury technique for blood fat, we determined the saponifiable blood fats in samples of

venous blood drawn (1) before exercise, (2) shortly after exercise, and (3) two to three hours after exercise.

Our data yielded the following: In the thirteen subjects tested, the average increase of O_2 consumption over the sitting values, attributable to standing and vibrating, is 129.51 cc per minute. In all but three subjects the rate of oxygen consumption had returned to normal within thirty minutes after exercise.

The average "cost" of the total fifteen minute period was 2.369 liters of oxygen. Assuming an RQ of 0.82 and a caloric value of 4.82 calories per liter of oxygen, one is led to the conclusion that the subjects consumed on the average 11.41 calories of fuel more than they would have had they merely sat still throughout the same period of time. This represents the equivalent of 1/23 of an ounce of fat. To lose a pound of fat (4320 calories) would then require 375 such fifteen minute periods of vibration or roughly, one a day for a year.

Five individuals showed an average drop of 8-12 milligrams of fat per 100 cc of blood in the post exercise periods. Seven individuals showed an average rise of 14.2 milligrams under the same conditions. None of these figures fall outside the fluctuations attributable to the experimental error of our method and are, therefore, insignificant.

The conclusion seems warranted that the vibrator is not to be taken seriously as a device to assist in fat reduction or in shifting of fat deposits within the body.

*George Williams College Laboratory for Physiologic Research in Physical Education, Chicago.

PENN STATE — Cont'd from Page 90

a student's performance may be relatively poor in comparison with group standards, but for him and his limitations it may be a fine performance. The student's needs, limitations, and capabilities are considered in evaluating his progress in the adapted program.

Both objective measurement and subjective judgment are used in evaluating student progress. Certain

agreed-upon objectives such as improvement in activity skills; acceptable physical status; and gains in such physical qualities as strength, endurance, and flexibility are measured objectively. Such intangible objectives as sociability, emotional stability, self-esteem or self-confidence, are appraised subjectively. Any technique that will help the instructor secure the desired information regarding student progress toward agreed-upon objectives is used.

Program Report

A BODY MECHANICS PROGRAM IN A GIRLS PHYSICAL EDUCATION DEPARTMENT

Margaret Carroll*

Over a period of years, the Needham (Mass.) Senior High School girls physical education department has felt a very definite need for a program to educate the students in good body mechanics. A good foundation and training in habits of good body mechanics is every student's right. Just as each student is taught to use the mind in an orderly way, she should be taught the correct way to use the body by developing those habits of sitting, standing, walking and everyday movements that encourage good body mechanics. With a reconstruction of the old school building when the new addition was added recently to the Needham Senior High School, the facilities to carry on a good body mechanics program in the girls physical education department were made available. We have started a body mechanics program which we realize is just a small beginning, but we have every prospect that this part of our program will grow in the years to come.

This is the second year the program has been in effect. The physical education teacher decides upon those students who should be in the program by:

1. Giving all classes a posture test in walking, sitting and standing. This test is an observation test by the physical education teacher.
2. All classes are given the Kraus-Weber muscle strength test.

The students who fail either of these tests are advised to take the body mechanics program. Each student who shows the need is approached by the physical education teacher and encouraged to join the program in body mechanics. Should the student decide to report to the group, it means coming to class regularly during what was previously a study period. This places the group on a volunteer basis. We are hoping to find a different way to form the classes so that the students will not have to give up a study period.

Out of 580 girls enrolled in the high school, approximately 60 girls take advantage of the program offered. The students report once a week. The facilities available are adequate. The body mechanics

room is equipped with mats, stall bars, stools, mirror, balance beams, weight pulling equipment, a record player and suitable records. The present facilities could accommodate 60 students each school day. The reasons the facilities are not used to the maximum are: (1) lack of teaching personnel; (2) students report during a period which was formerly a study period.

The content of the program is as follows:

1. Symmetrical exercises to strengthen weak muscles.
2. Teaching the efficient way to carry the body in standing, sitting and walking.
3. Developing correct habits to replace incorrect habits of body posture.
4. Administering a program of exercises for each pupil to meet her specific need.
5. Demonstrating a home schedule of exercises for each student to perform daily.

After being in the program for a period of ten weeks, the students are tested and those who pass the test are dismissed if they choose. Frequently they request to remain in the group.

Those students who have participated in the program show definite improvement. They have shown enthusiasm and satisfaction in their improvement. The physical education teachers feel that this is a very important part of the physical education program. When all who need the program will be able to take it without giving up a study period, the contribution will be very gratifying and worthwhile.

Now that the program has been organized, the physical education department is hoping for adequate personnel in the department to really "go places" with the program.

*Supervisor of Girls Physical Education, High School, Needham, Mass.

AMERICAN BOARD FOR CERTIFICATION OF CORRECTIVE THERAPISTS

NEXT CERTIFICATION EXAMINATION

July 10, 1957

The Conrad Hilton, Chicago, Ill.

Interested applicants, please contact:

Louis F. Mantovano

37 Clinton Avenue

Rockville Centre, L.I., N.Y.

The nominating committee of the Association for Physical and Mental Rehabilitation, Louis Fishbune, chairman, has announced the following slate of candidates for election at the meeting of the General Assembly to be held during the week of July 7 in Chicago.

FOR FIRST VICE PRESIDENT

Karl K. Klein, Austin, Texas

Eleanor B. Stone, New York, N. Y.

FOR SECOND VICE PRESIDENT

Charles Castle, Chillicothe, Ohio

Charles Willhite, Lakeland, Calif.

FOR THIRD VICE PRESIDENT

Norman N. Tenner, Chicago, Ill.

Ernest A. Wilbur, New Orleans, La.

FOR SECRETARY

Lester P. Burrowes, Clinton, Miss.

Vincent T. McGrath, Philadelphia, Pa.

FOR TREASURER

Willis P. Denny, Dublin, Ga.

Raymond B. Heaslet, Tuscaloosa, Ala.

The following brief biographical sketches have been prepared in order to acquaint the membership with the nominees:



Karl K. Klein

Serving at present as Second Vice President; formerly was chairman, professional standards committee and has served for seven years on education committee . . . At present, supervisor for the program in Adapted Physical Education and Rehabilitation, Univ. of Texas . . . Previously served in the U. S. Navy's physical rehabilitation program and was assistant professor and advisor to physical education students in rehabilitation at Ithaca College for five years . . . The author of thirteen articles related to research in rehabilitation problems.

Charles Castle

Graduate of Georgetown College (Ky.) in 1949 and holds the M.A. degree from the University of Kentucky . . . Entered CT in 1950 as a therapist at the Chillicothe (Ohio) VAH and was promoted to supervisor in 1954 . . . At present, chairman of the chapter committee of the national association and active in the affairs of the Ohio-Kentucky chapter.



Eleanor B. Stone

Serving at present as First Vice President; had three previous terms as Treasurer of the association . . . She has been a teacher of adapted physical education in the high schools of New York City for many years and at present is on the staff of Morris H.S., the Bronx . . . Author (with Dr. Deyton) of "Corrective Therapy for the Handicapped Child" (Prentice-Hall, 1951) which is now in its third printing—also has written several articles on her specialty.



Heaslet



Denny



Castle

Charles E. Willhite

Graduate of the University of Illinois, he was a therapist, and later supervisor in CT at the Long Beach (Calif.) VAH from 1950-56 . . . He has published a number of professional papers dealing with adaptations of rehabilitation equipment for the treatment of paraplegics . . . An active member since 1950, he served two terms as Third Vice President of the association (1954-56) . . . At present, executive assistant to Dr. George K. Faulkner, director of the Boron (Calif.) Community Hospital and Clinic.

A. P. M. R.
for Office

Candidates

1957-1958



Norman N. Tenner

Serving at present as co-chairman of the national convention, he is Chief CT at the VA Research Hospital in Chicago and was formerly assistant chief at Hines . . . Graduate of No. Illinois State Teachers, he taught physical education for three years prior to Navy service as chief specialist in athletics . . . Later received commission and served as deck officer on patrol craft . . . Developed Reach Jump chart, part of Navy Physical Fitness Test and has developed several pieces of CT equipment.



Lester P. Burrowes

Serving at present as Secretary of the association, he was for two years Secretary-Treasurer of the Southeastern Chapter and President of that organization in 1955 . . . Has been a member of the CT staff at the Jackson (Miss.) VAH since 1946 as supervisor of the NP section . . . Served two years as chairman of the APMR constitution committee . . . Member of the Governor's Committee for Employment of the Physically Handicapped, State of Mississippi.

GENERAL ASSEMBLY ELECTION

July 9

The Conrad Hilton, Chicago



Vincent T. McGrath

Graduate of American College of Physical Education and Univ. of Chicago . . . Has 24 years of experience as teacher of remedial work in Chicago and Gary, Ind. . . Former chief of reconditioning in U. S. Army, he served at several hospitals in Virginia and Penna . . . At present, Chief CT, VA Regional Office, Philadelphia and active in the affairs of the Mid-Atlantic Chapter.

Raymond B. Heaslet

Serving at present as Treasurer of APMR, he is past-president of the Southeastern chapter . . . For last ten years he has been Executive Assistant, PM&RS, at VAH, Tuscaloosa, Ala. . . Graduate in physical education from Birmingham Southern; served as high school teacher and coach for five years; later advanced to principal . . . Was director of safety services for American Red Cross in Tuscaloosa for two years . . . Served in U. S. Army as physical reconditioning instructor.

Willis P. Denny

Currently serving as President of Southeastern chapter, chairman, APMR constitution committee and member of the Governor's Committee for Employment of the Physically Handicapped, State of Georgia . . . Has been Chief CT at VAH, Dublin, Ga. since 1948 . . . Graduate of Ogelthorpe Univ., he was a teacher-coach in Georgia secondary schools for six years . . . Served in Army from '43-'48 and was commissioned in '45 as physical reconditioning officer . . . Recalled to duty in '50 and served as chief, physical reconditioning, at the 279th Gen. Hosp. in Osaka, Japan for three years.

Ernest A. Wilbur

Has eleven years experience as Chief CT at VAH, New Orleans; in addition, he is acting executive assistant and lectures in the Department of Orthopedics, Tulane Univ. . . Formerly served as an instructor in the Hygiene Department, City College of NY and was an officer in the Navy reconditioning program during WW II . . . Attended both NYU and Teachers College, Columbia Univ. and holds the Ph.D. degree from the former . . . Has served two terms as president of the Texas-Louisiana chapter; presently a member of the professional standards committee of APMR and has served two years on the Governor's Committee for the Employment of the Physically Handicapped.

very weak. He was told that he could not expect to regain his former strength in less than three years. Enrolled again in our program, with the doctor's permission, he not only regained his former strength during his sophomore year, but actually went quite a bit beyond. In the fall of his junior year he had surgery for varicose veins and was inactive for some time. After his period of convalescence he was again placed in the remedial program and his strength rebuilt. In his senior year he was varsity catcher on the baseball team, and he continued on to college where he became a very fine athlete.

Anthropometrical measurements are taken at regular intervals but, of course, are interpreted with consideration given to natural growth. Increases may not mean too much in dealing with boys who are still growing and adding poundage. However, it is reasonable to assume, citing a specific case, that a boy with an extremely flat chest has been helped when his chest girth increased six inches, with a weight increase of but nine pounds; from one hundred twenty-six pounds to one hundred thirty-five pounds. The weight reducing group is the most measurable phase

of the corrective program. If the subject loses weight and gains in strength, the objectives are met. With the aid of scales and simple strength tests this is easily determined. The reconditioning program is justified by providing a transition between prolonged inactivity and the vigorous demands of the regular physical education classes. In the opinion of the coaching staff, the program for out-of-season conditioning of athletes has proved itself a definite contribution to competitive sports. This is especially true in activities where strength is an important factor.

Not too much has been said about the exercises used in the Weymouth program. Success in this type of work does not depend upon fancy or trick exercises but rather upon adequate stimulation of the neuro-muscular efforts. Exercises, to use the vernacular, are a dime a dozen. The important things are the philosophy and background of the instructor.

The prime purpose of this article is to provide exploratory information, derived from experience; information which may help others to establish an adaptive program in a school situation for the purpose of fulfilling some of the educational aims of physical education.

"From Other Journals"

(Unless noted otherwise, all abstracts included in this section have been prepared by Philip J. Rasch, Ph.D.)

✓ Editorial, "Fitness of American Youth," *Journal of the American Medical Association*, 163:648-649, February 23, 1957.

A true concept of fitness includes the mental, the moral, the social, and the emotional as well as the physical. Such a concept of fitness is implemented best through a school-community program designed to reach all of our youth. There has been a rapid acceleration of interest in school health services, healthful school living and health education. The President's Council on Youth Fitness is to be concerned largely with coordination of existing programs.

E. LYLE GAGE, "Self-Reduction of Dislocated Shoulders," *West Virginia Medical Journal*, 53:74-75, February, 1957.

Following dislocation of the shoulder there is usually a latent period of a few minutes before the muscles of the shoulder girdle go into spasm. Reduction during this time can perhaps be done by the injured person. The method is: (1) Sit down; (2) Grasp wrist of dislocated arm firmly; (3) Flex leg and thigh on side of dislocation and slip the joined wrists over the knee, leaning as far forward as possible; (4) Slowly straighten the back, the thigh extended, and push the knee against the wrists, exerting a pull on the arm of the dislocated side.

W. A. KREHL, "A Concept of Optimal Nutrition." *Ameri-*

can Journal of Clinical Nutrition, 4:634-641, November-December, 1956.

Optimal nutrition might be described as that which provides all dietary nutrients in respect to kind and amount, and in proper state of combination or balance so that the organism may always meet the varied exogenous and endogenous stresses of life, whether in health or disease, with a minimal demand or strain on the body's natural homeostatic mechanisms. This is beyond the reach of two-thirds of the world's population and presents one of the most acute and serious problems which our political leaders have to solve if we are to preserve the free world. The secret of man's success in conquering his environment lies in the ability of the body to preserve homeostasis. Nutrition plays an important role in determining the capacity of the body to maintain this condition. The capacity of homeostasis may vary with each individual and optimal nutrition may vary with the psychologic status at a given age during the life process. This makes it difficult to establish the quantities of nutrients which provide optimal nutrition.

GEORGE C. TWOMBLEY, "Role of Physical Medicine in Chronic Joint Disease," *Rocky Mountain Medical Journal*, 54:44-50, January, 1957.

Exercise as carefully prescribed and properly used can contribute much to the patient afflicted with a chronic joint disease. There is a fine balance between over-exercise and under-exercise. Exercise in such patients often produces temporary increase in pain. If this discomfort persists longer than the following day, the exercise regimen is probably too intense, the repetitions too frequent or the type incorrect. Posture and deep breathing exercises are especially valuable in rheumatoid spondylitis to discourage progressive development of kyphosis and formation of costovertebral ankylosis. The effectiveness of physical treatment is frequently enhanced by the concomitant use of proper medications. Partial temporary relief of pain with drugs enables the patient to participate with less pain in his physical treatment program and thus gains better results, especially from the exercise regimen.

FRED B. BENJAMIN, "The Effect of Pain on Performance." *U. S. A. F. Medical Journal*, VIII:332-345, March, 1957.

Pain was produced in subjects by means of a pressure headgear, pressure cuff or ice water. Pain stimuli did not effect tasks involving primarily memory and speed of performing mental tasks. The number of mistakes in simple mental tasks was increased in the presence of pain, but this increase appeared to be independent of pain intensity. In higher mental tasks the number of mistakes was increased and this increase corresponded roughly to the pain intensity. Time estimation was increased. Muscular co-ordination was impaired. This impairment increased with the pain intensity. Simple reaction time was not affected; choice reaction time was prolonged. The amplitude of the patellar reflex was not affected by pain, but the threshold of the skin flare reaction was significantly raised. In short tests of work performance, the total work was not significantly altered, but the efficiency of work was markedly decreased.

MACDONALD CRITCHLEY, "Congenital Indifference to Pain," *Annals of Internal Medicine*, 45:737-747, November, 1956.

The condition of "congenital indifference to pain" is a rarity. Sometimes the subjects are also insensitive to smell, taste and itching. Neurologic examination reveals no abnormality other than sluggish or absent corneal responses. Skin biopsies have yielded a perfectly normal picture of nerve-endings and neurofibrils. The conception of some defect at the highest level, in particular within the frontothalamic connections, is favored as an explanation. It is inconceivable that a lifelong freedom from pain can fail to influence the emotional life of the subject. Case records indicate that unusual emotional or behavioral pictures of one kind or another are the rule. Whether such subjects can achieve pleasure from warmth or coolness, caresses, exercise or dancing is unknown.

"The Biological Basis of E. Zatopek—The World Champion's Feats of Endurance," English summary of Z. HORNOF and M. KREMER, "Biologicky Podklad Vytvalostnich Vykonu Svetoveho Rekordmana Zatopka," *Sokol*, 72:167-203, 1952.

The development of Emil Zatopek was studied for nine years. The following inferences were drawn on the biological basis of a runner's feats of endurance: (1) The body type permits peak performances of endurance. Inborn somatic characteristics are improved by training; (2) Peak performance requires perfect health, and perfect nervous, metabolic and hemorespiratory systems; (3) Long-distance racing requires all-around physical training. The best is daily training with a gradual increase of handicaps. During training a strong will and conscious effort is required to overcome difficulties and reach a previously determined goal. Fatigue is overcome by running until tired and then continuing. Perfect conduct of life is a primary assumption; (4) Technique of running improves by training; perfect style at the beginning of training is not necessary.

HOWARD D. FABING, "On Going Berserk: A Neurochemical Inquiry." *The Scientific Monthly*, 83:232-237, November, 1956.

The Norse sagas speak of men going Berserk, during which time they were seized by a wild fury which doubled their strength and made them insensible to bodily pain, humanity and reason. Men, thus seized, performed deeds which seemed impossible. This condition began with shivering, chattering of the teeth, and a body chill. The face swelled and changed color. A great rage followed during which they cut down anything they met. The fury lasted about a day. It was followed by dullness of mind and feebleness, which could last up to several days. Recently intravenous injections of bufotenine were studied during the course of inquiries into possible chemical factors in the causation of schizophrenia. The reactions obtained were similar to those of the Berserks. Since bufotenine is found in the mushroom *Amanita muscaria* of Eurasia, it seems likely that Berserksgang, or "going berserk," was a psychosis induced by eating this mushroom.

SVEND M. CLEMMESSEN, "The Influence of Shoes on Deportment and Gait," *Postgraduate Medicine*, 21:43-51, January, 1957.

The architecture of the shoe to a large extent determines a person's posture and gait. Most likely, the heel of the shoe was invented to facilitate the heel-raising and take-off phases of the step while walking on pavements. During standing the elevation of the hind part of the foot results in an antivalgus effect on the os calcis. Heels are only troublesome in soft ground. A wrongly constructed heel may cause the foot to slide forward and downward, overloading the forefoot. A heel constructed with a slight hollow and properly placed will take over much of the weight exerted on the forefoot during standing. The shape of the insole and last and the heel have a decided influence on the distribution of movements to the different joints of the foot and to the person's gait and deportment. It is wrong to maintain that a certain foot angle is the only normal one. The fundamental law is that the axis of the knee should be kept in the frontal plane to obtain alignment of the leg during gait. This law is important when braces and prostheses are built.

WARREN L. FRANZ, G. WINTHROP SANDS and HENRY L. HOYLE, "Blood Ascorbic Acid Level in Bioflavonoid and Ascorbic Acid Therapy of Common Cold." *Journal of the American Medical Association*, 162:1224-1226, November 24, 1956.

During the past year treatment with bioflavonoids has been widely publicized as a means of preventing or modifying the common cold. One of the reasons given has been that they potentiated ascorbic acid (vitamin C) in alleviating cold symptoms. One group of 22 subjects was given naringin and ascorbic acid three times daily for three months; a second group received naringin only; another ascorbic acid only; the fourth a placebo. The administration of a bioflavonoid affected neither the incidence nor cure of colds nor the ascorbic level of the blood.

SVEND CLEMMESSEN, "Physical Medicine and Modern Physics," *Annals of Physical Medicine*, IV:17-25, February, 1957.

The modern philosophy derived from modern physics has shown that "either-or" thinking will be wrong in many cases. The theory of "both-and" should be accepted. A phenomenon may have, and often has, more than two complementary aspects. Our dilemmas, with their apparent contradictions, may be artificial and due to incomplete definitions of the concepts. Our knowledge of volitional movement is erected upon a basis of observations and theories whose nomenclature needs revision. We must make clear definitions before we take up theoretical studies. The fact that we disturb a process when we study it becomes of increasing importance as our methods of measurement improve. The concepts of the macroscopical world cannot be used in studying the quanta of muscle and nerve action. Most of our tissues are innervated both neurologically and humorally. The use of complementarity in our descriptions is essential. Diseases must be studied as an interaction between an individual and his environment.

EDWIN FRENCH CAVE, "Treatment of Ankle Injuries." *GP*, XV:85-93, March, 1957.

The usual ankle sprain will respond to adhesive support which should be renewed at weekly intervals for four to six weeks. The following routine may be used: (1) Shave the part carefully, avoiding razor nicks of the skin; (2) Apply a gum solution which will protect the skin; (3) Have the patient sit facing the physician with a string around the toes holding the foot in slight eversion. Gauze or thin felt should be placed over the tendinous structures, particularly the anterior tibial tendon. One inch adhesive strips should be applied firmly but without pulling or wrinkling. To protect the stocking the tape may be covered with a gauze bandage. After the tape is finally removed, the patient should be given exercises to restore strength to the muscular structures about the ankle joint and foot.

Editorials

This issue of the *Journal* is devoted principally to adapted physical education, a field closely linked with corrective therapy in its aims, objectives and general philosophy.

Adapted physical education is a relatively new term for the area of specialized physical education formerly known variously as "corrective" or "remedial" physical education; or by the combined term, "corrective remedial physical education." Although these latter terms continue to exist, and in many cases programs continue to warrant such designations, the broadened scope of specialized physical education for the exceptional student has helped to bring about general acceptance of the newer term.

As defined by the American Association for Health, Physical Education and Recreation, the aim of adapted physical education is "to provide a diversified program of developmental activities, games, sports and rhythms suited to the interests, capacities and limitations of students with disabilities who may not safely nor successfully engage in unrestricted participation in the vigorous activities of the general physical education program." As the definition makes clear, the primary purpose of such a program is to provide a broad base of fundamental experiences in physical education for exceptional students. However, because of the lack of homogeneity in the usual group assigned to adapted physical education classes, specific aims and objectives are usually designed on an individualized basis. In many cases admittedly, the program may be carried on along definitive lines with the emphasis on corrective or remedial aspects — the therapeutic approach. For some students the program may be primarily designed to develop strength, endurance and organic power — the reconditioning approach. For physically handicapped students who are also emotionally maladjusted, programs may be designed to provide social outlets, develop confidence and make better social adjustments—the psychological approach. The adapted program in colleges frequently stresses the teaching of selected activities with a carry-over value, activities which the handicapped student can pursue in later life — the recreational approach. Throughout the program runs a basic physical education aim, the teaching of neuromuscular skills, but in the case of the adapted program skills are taught with the definite purpose of increasing physical abilities of the handicapped student — the functional approach.

These approaches closely adhere to those used in corrective therapy, and therapists can well appreciate the strong bond which should exist between workers in these two fields.

At the present time it seems appropriate to differentiate the adapted program at the secondary level from that at the college level where procedures are more standardized and the program is apparently more firmly established. Although there is much support for specialized physical education on the secondary level, improvement in programs must await the solution of more generalized problems by school administrators. Where schools are overcrowded, personnel is insufficient to meet the needs of even the "average" child and many schools are being operated on the dubious basis of a double session, it cannot be expected that much consideration will be given to the development of special programs. Neither is it logical to assume that a school will ever revolve its schedule around a minority—in this case the relatively small number of handicapped students in attendance. However, the responsibility remains, and we believe that democratic ideals in education cannot be realized until schools are able to provide facilities and personnel to meet the needs of *all* of its students. Certainly those individuals who are continuing to promote the cause of the handicapped in our schools should not forsake their ideals at this time. They deserve both our encouragement and support.

JOSEPH F. FAZEKAS, JAMES G. SHEA, AND PAUL D. SULLIVAN, "Ataractics in Medical Practice," *GP*, XIV: 75-81, December, 1956.

The management of functional disturbances of the central nervous system, as manifested by increased psychomotor activity, constitute a difficult problem in medical practice. The hypnotic drugs (barbiturates, chloral hydrate, etc.) produce such a deep state of sedation that the patient is rendered helpless, and they may perpetuate the underlying psychoneurologic disturbance. Recently ataractics have been used for the management of patients with anxiety reactions and increased psychomotor activity. These exert their primary actions on different subcortical areas, some of them appearing to affect the posterior hypothalamus. The tranquilizing agents may be used with patients suffering from acute and chronic anxiety states. They are useful in anxiety states associated with somatic disease, alcoholism, drug addiction and with disturbed psychotics. Ataractic agents render the patient more accessible to psychotherapeutic procedures, but no definitive statement can be made regarding their relative effectiveness in long-term therapy. Drug therapy in psychiatric disease is merely an adjunct to other forms of therapy—the social, environmental and interpersonal relationships cannot be ignored.

Book Reviews

Publishers are requested to mail books for review directly to the Book Review Editor, Philip J. Rasch, Ph.D., 567 Erskine Drive, Pacific Palisades, Calif.

"The Stress of Life," by Hans Selye. (New York: McGraw-Hill Book Company, Inc., 1956. 324 pp. \$5.95)

During the last few years Selye's concepts of stress have been the subject of much discussion. Most of his previous writings have appeared in professional publications, but he has now given us a book specifically designed for the lay reader. The great interest which he has aroused in the subject and his facile style of writing will surely guarantee him a wide audience. The subject contains some important implications for the corrective therapist. Selye points out that when an individual is repeatedly faced by the same problem, his defenses tend to react in a stereotyped way. They can be shaken out of this habitual response if exposed to some form of shock therapy. This suggests that before a habitual response becomes thoroughly entrenched it may be possible to dislodge it by exercise or other means less violent than shock. Exercise may relieve the "keyed up" emotions resulting from the excess discharge of the adrenals in response to stress—a condition which Selye describes as that of a man "intoxicated with his own stress hormones." Every individual has a certain amount of innate vitality which must be given an outlet. The need may be for a change of activity, not for rest. By activating the whole body, the source of a particular stress automatically becomes proportionately less important, and equalizing and decentralizing activities are set in motion. Selye's theories seem to have within them the genesis of a holistic concept of therapeutic exercise. Every corrective therapist seriously interested in his profession should read this book and ponder its implications. Any lay reader with the slightest interest in how his body functions will find it both enjoyable and stimulating.

—PJR

"Proceedings First Asian Physical Education Health and Recreation Congress." (Manila: Bureau of Printing, 1955. 88 pp.)

It has been a weakness in Western thought that it has largely tended to ignore the East. Courses in the history of physical education, for instance, usually start with the Greeks and confine themselves to developments in the Western hemisphere. *The Proceedings of the First Asian Physical Education Health and Recreation Congress*, recently received through the courtesy of Professor Candido C. Bartolome of the University of the Philippines, indicate that the time is at hand in physical education when ignorance of the East will be synonymous with ignorance of a large part of the field. This Congress was sponsored by the Philippine Physical Education Association and convened in Manila on April 27-29, 1954, just prior to the Second Asian Games. It clearly draws its inspiration from the symposia on sports medicine usually held in connection with the Olympic Games. This first book will be of interest primarily to readers connected with school physical education, since such subjects as health and physical education in China, school health programs in the Philippines, physical education in Indonesia, etc. made up the bulk of the talks. There are, however, papers on the status of sports medicine in Japan, sport and menstruation and the treatment of baseball shoulder which will be of particular interest to Corrective Therapists. Professor Bartolome and his conferees are to be congratulated on the success of this first Congress. It augurs well for the future of physical education in the East.

—PJR

"Therapeutic Exercises for the Treatment of the Neurologically Disabled," by Harold J. Brenner. (Springfield: Charles C. Thomas, 1957, 73 pp.)

It is a simple fact of life that the pretensions of any individual or group to professional recognition are judged almost entirely by the quality of his or their literary output. During the years immediately following World War II, the attention of the corrective therapists was centered almost entirely on problems of organization. To some extent they are still plagued with these matters, but the time has come when they must give heed to justifying their claims to a professional status. *Therapeutic Exercises for the Treatment of the Neurologically Disabled* is perhaps the most effective argument yet adduced on their behalf. In this slim volume the assistant chief of corrective therapy, Veterans Administration Hospital, Sepulveda, California, has considered the role of therapeutic exercise in ambulation, hemiplegia, multiple sclerosis, parkinsonism, poliomyelitis and polyneuritis. Each disease is reviewed in a logical sequence comprising its history and etiology, symptoms, prognosis, corrective therapy treatment, and goals or objectives. An annotated bibliography and an Appendix complete the book. Included in the Appendix are a table of Medical Combining Forms, a Glossary of Technical Terminology, and a section showing pictures of corrective therapy clinics in action. This is the first text in which neurological disabilities have been considered from the specific standpoint of the philosophy and procedures of corrective therapy. It is an essential item in the professional library of every corrective therapist, corrective physical education teacher or student, hospital, and rehabilitation clinic. If you do not have it, get it.

PJR

"The Person Behind the Disease," by Julius Bauer. (New York: Grune & Stratton, 1956. 136 pp. \$3.00)

In this small but informative book the distinguished author of *Constitution and Disease* and *Differential Diagnosis of Internal Diseases* offers a holistic concept of medicine. Running counter to the current tendency toward ever-increasing specialization in medicine, the author first discusses the "Etiologic and Pathogenetic Factors in the Diseased Person," and then the "Uniqueness of the Individual." He considers this concept from the standpoint of mutations, pathogenic and non-pathogenic, and clinical entities, such as the enzymes, gamma globulin, dyshemoglobins, habitus, and obesity. The basis for "constitutional biologic organ inferiority" is described as it pertains to heart and blood vessels, kidneys, bones and glands, with an attempt made to synthesize these into "holistic medicine." The final chapter's discussion of the mind, neuroses and psychoses, personality, and drives make this little book one of unique appeal to anyone interested in understanding Man.

—MLB

"Life and Mind," by Edmund Ware Sinnott. (Yellow Springs: Antioch Press, 1956. 29 pp. 50 cents. Paper)

In this second Antioch College Founders Day Lecture, Sinnott suggests that the physiological reactions of the body—the *vis medicatrix naturae*—and the behavioral reactions of the mind are both homeostatic mechanisms. Both are thus manifestations of the same basic process. The fact that this organizing and self-regulating ability is also the most characteristic feature of life itself indicates that there is a fundamental identity between life and mind. He courageously accepts the logical outcome of this analysis—a declaration of belief in idealism and teleology—concepts which have been very much out of favor with biologists during the last several decades. The thoughtful corrective therapist, whose very profession presupposes either an identity of, or an interaction between, body and mind will find this booklet fascinating reading. Sinnott has set a high standard for future speakers.

—PJR

"Psychiatric Education and Progress," by John C. Whitehorn. (Springfield: Charles C. Thomas, 1955. 48 pp. \$1.75)

This brief monograph presents the Salmon Lectures of the New York Academy of Medicine, November 30, 1955. It is divided into two parts. The first section consists of Whitehorn's evaluation of psychiatric education, his own philosophy regarding methods of education, and a clarification of present semantic confusion as related to resident psychiatric training. He discusses and interprets the overall philosophies of the Meyerian and the Freudian approaches as related to psychiatric education. Of major interest is the concept presented by the author in which he terms "doctrinaire bias" in psychiatry an obsessive defense mechanism (used by the professional person) against the distress which is suffered by him in his admission of ignorance and indeterminism in areas where he does not know the answers.

In section two the author is more concrete in expressing his concept of practical methods for implementation of educational goals in psychiatric education. Whitehorn recognizes the schism between the psychoanalytic and the descriptive teaching techniques and stresses re-evaluation of methods through which psychodynamics may, with the assistance of the psychoanalyst, be more practically integrated into the overall pattern of psychiatric education. The presentation is clear and the author writes in an interesting style, with his didactic philosophy unmarred by excess verbosity. One has the "feeling" that the direction of psychiatric education and progress, as pointed out by the author, may lead to a maturation of processes necessary in achieving educational goals. This monograph should be read by all neurologists, psychiatrists and educators. Stimulation from such monographs should motivate additional study and research into methods of resolving problems of training in behavioral sciences.

—DCL

"Basic Principles of Parliamentary Law and Protocol," by Marguerite Grumme. (St. Louis 16: 3830 Humphrey St, 1955. 68 pp. \$1.00 Paper.)

In the reviewer's experience, most business meetings would function much more efficiently if the presiding officers would enforce parliamentary procedure. Grumme has boiled this procedure down to its essential rules and has presented them in the simplest possible form. With this booklet available there is no excuse for any presiding officer to plead ignorance of the subject. The reviewer believes that if such officers were to equip themselves with a copy of this booklet and utilize its contents, most meetings would accomplish more and adjourn earlier—a development which we devoutly await.

—PJR

"Nutrition and Diet Therapy," by Fairfax T. Proudfit and Corine H. Robinson. (New York: The MacMillan Company, 1955. Eleventh Edition. 859 pp. \$5.25)

The neophyte corrective therapist quickly finds that he needs to know more about hospital diets than he learned in his college courses. This reviewer still remembers the blank feeling he experienced while hearing a physician remark that he hoped to accomplish the same results by having the patient exercise in the C. T. gym that he would by placing him on a ketogenic diet! Further, the therapist learns that because he works in a hospital his friends expect him to know all about Sippy diets and other nutrition programs (of which he probably knows nothing). The therapist confronted with such questions will find this volume an excellent and convenient reference. The fact that it is now in its eleventh edition demonstrates that it has been very well received by the professional dietitians, indicating that the material presented therein is highly reliable. The book is quite detailed—as evidenced by the discussion of diets for various racial and religious groups—but it is well written and well organized. It is highly recommended for anyone having a need for a suitable text in this field, either for teaching or for reference.

—PJR

"The Rape of the Mind," by Joost A. M. Meerloo. (Cleveland: The World Publishing Company, 1956. 320 pp. \$5.00)

Many therapists have already had the experience of working with "brainwashed" patients. Unfortunately, in the future this may become even more common. In this book the author, himself once a victim of the Nazi concentration camps, studies the phenomena of enforced false confession. It is, he says, simply an effective application of Pavlov's theories of the conditioned reflex. Properly applied, nearly any man can be broken by these techniques—many of which are effectively used in modern high pressure advertising. Meerloo compares life under totalitarianism with schizophrenia or the hypnotic state, and his analysis of our technology-centered, bureaucratic-directed culture is frightening. How can men be trained to resist brainwashing? Here the author seems much less sure of his ground. He rejects the Air Force "school of torture" answer. Intelligence is not the answer; the more intellectual the subject, the easier it is to destroy him because of his own internal questioning. The stricter the obedience training in childhood, the easier it is for the individual to welcome the authoritarian demands of a totalitarian leader, and the more likely he is to release his hidden frustrations and resentments by physical aggression. Nor does the athlete withstand stress of this type better than the physically weaker individual. Two types seem to survive—the troublemaker, who is resistant to all authority, and the man who has deep self-knowledge. Religious faith or other allegiance to a group or to a set of ideals helps. Meerloo's personal experiences enable him to illustrate nearly every point he makes with a personal anecdote. The problem with which he deals is timely and important. Its implications directly affect every citizen of our country. Each would do well to read it and to ponder the questions with which it deals.

—PJR

"A. A. U. Study of Effect of Athletic Competition on Girls and Women." New York: Amateur Athletic Union. N.d., n.p. Paper.

The A. A. U. sought the opinion of a Commission of physicians and others interested in sports on the effect of athletic competition on girls and women. The findings are reported in this pamphlet which is presumably the most authoritative statement we have on the subject. In general the Commission felt that the results of properly conducted athletics were entirely beneficial to feminine participants. An Appendix contains reports of some additional studies. Apparently this booklet was intended for popular consumption, since it is not in the format typical of scientific papers. In any event, it should have been printed in a type size which could be read without endangering the eye sight. It is understood that a revised edition is in preparation and it is to be hoped that the opportunity will be taken to improve both the format and documentation.

—PJR

"Mental Health Administration," by Jack R. Ewalt. (Springfield: Charles C. Thomas, 1956. 168 pp. \$5.50)

This well-written monograph examines and evaluates the problem of administration as specifically related to mental health programs. It covers in outline form such subjects as administrative concepts and organizations, community health programs, professional and business aspects, volunteers, the chaplain, problems of employee morale, psychiatric problems and the law. Bibliographies, reading lists, appendices and an index are included. Here is a practical, concise, coherent presentation of the problems of administration in the community health center and how they may be met. This book should prove invaluable to physicians, social workers and psychologists when they find themselves responsible for the administration of a mental health program, or a member of the board of a hospital or clinic. For the legislator who must make decisions regarding mental health bills, this volume provides a complete and ready reference.

—DCL

"Education and Human Motivation," by Harry Giles. (New York: Philosophical Library, 1957. 108 pp. \$3.00)

In this brief monograph the author integrates many of the theories of the geneticists, psychoanalysts and social psychologists into a concept of "growth." He uses this particular term to express the total instinctual and environmental behavior of the individual in striving for increased self-esteem. The individual is considered as a total person composed of inherited characteristics, intelligence and emotion, all of the three reacting and inter-acting within the individual and with his environment. He examines the concept of growth from a biological and psychological point of view, and considers the individual's limitations and potentialities for growth. In the final sections growth in human society is discussed, based on the concept that society has within itself the potential to allow individual growth, if it will recognize this as inherent within the individual, and "freedom of growth" as a basic concept of an enlightened society. There is an extremely interesting and well written chapter on growth and democracy, in which the principles of democracy are interpreted upon the concept that such principles can promote human growth and mature society if not distorted by the selfish individualism of power groups. This material has a great deal of practical application, and to the reader interested in "field theory" as related to an understanding of social maturation it presents many stimulating ideas which could provide practical research projects in the field of interpersonal relations. Footnotes are present throughout the small volume, and a selected bibliography is included.

—DCL

"The Neurologic and Psychiatric Aspects of the Disorders of Aging," (Baltimore: Williams & Wilkins Company, 1956. 307 pp. \$8.50)

This comprises the Proceedings of the meeting of the Association for Research in Nervous and Mental Disease held at New York December 9-10, 1955. The topics selected for presentation deal with fundamental problems of aging and related neuropsychiatric problems and are integrated into an interesting and scholarly "total approach." Comprehensive chapters present recent progress in the study of the biological processes of aging, followed by a panel discussion in which leading authorities consider the sociological problems involved in aging. As is the pattern of previous publications of the Research Association, each chapter is followed by practical discussion of the material presented. A reference bibliography follows each chapter. There are 79 illustrations and 17 tables, as well as an adequate index. In this reviewer's opinion, this publication is outstanding as a practical reference source to the neurologist, psychiatrist or member of an allied discipline in the continuing attempt to understand the process of "aging."

—DCL

"Artificial Limbs," (Autumn 1956)

This issue consists almost entirely of "A study in the social-emotional relationships between injured and non-injured people," based on a project conducted under the auspices of the Office of the Surgeon General, War Department. The data was obtained principally by the interview method and contains some rather shrewd observations of the dynamics of people in general (such as the basis for the necessity of the married woman to consider spinsters unfortunate) as well of the injured. This is an exploratory study of a much-neglected field. Corrective therapists working in general medical and surgical hospitals, or any one else concerned with the problems of adjustment which take place as a result of a loss, will find this issue well worth reading.

—PJR

BOOKS RECEIVED

"Albert Schweitzer," by Jean Pierhal. (New York: Philosophical Library, 1957. 160 pp. \$3.00)

A superficial biography of the noted musician-theologian-physician.

—PJR

"The Road to Inner Freedom," by Baruch Spinoza. (New York: Philosophical Library, 1957. 215 pp. \$3.00)

A new issue of Spinoza's "The Ethics," edited and introduced by Dagobert D. Runes.

—PJR

"A Guide For Games," by D. Cyril Joynton. (New York: Philosophical Library, 1957. 302 pp. \$7.50)

An exorbitantly priced manual of games for use in physical education classes in British schools.

—PJR

"Ageing in Industry," by F. Le Gros Clark and Agnes C. Dunne. (New York: Philosophical Library, 1956.)

Changing patterns of age-structure in British industry.

—AM

"Microreproductions for Medical Libraries," (Washington: Veterans Administration, Dept. of Medicine and Surgery Program Guide G-7, M-2, Part XIII)

"Traumatic Paraplegia: A Selected Bibliography," by Muriel McKenna. (Washington: Veterans Administration, 1957. 66 pp. mimeographed. Free)

Contains 854 references classified as to subject matter.

Either of the above publications are available free to interested readers. Requests should be directed to the Chief, Medical and General Reference Library, Room 974, Veterans Administration Central Office, Washington 25, D. C.

News and Comments

SARCOIDOSIS UNDER STUDY BY VA

Launching of the first cooperative research attack on a mysterious tuberculosis-like disease called sarcoidosis has been announced by Veterans Administration. Five VA hospitals have just begun a study to learn the cause and nature of sarcoidosis so steps can be taken to prevent and treat it, VA said. The hospitals are at Atlanta, Ga.; Dallas, Tex.; Madison, Wis.; New York City Hospital, and Washington, D. C.

A doctor at each of the five hospitals has volunteered to study patients with sarcoidosis, not only clinically but with equal emphasis on factors such as environment, occupation, eating habits, and self-medication, which may furnish a lead to solving the cause of the disease. Sarcoidosis is more severe and much more widespread disease than has been believed, a preliminary study made by a four-man medical team from VA central office in Washington, D.C. shows. It occurs most frequently in persons between 20 and 40 years of age and produces symptoms often confused with tuberculosis, fungus diseases, and cancer. The growths or nodules characteristic of sarcoidosis usually occur in the lungs but can occur in any organ of the body.

The VA central office research team is made up of Dr. M. M. Cummings, director of research service; Dr. Edward Dunner, secretary of the VA-armed forces committee on chemotherapy of tuberculosis; Dr. R. H. Schmidt, Jr., tuberculosis service, and J. H. Williams of research statistics. The four have been investigating sarcoidosis since 1954. Their study indicates sarcoidosis sometimes becomes a severe disabling disease and causes death in a larger number of patients than heretofore suspected. They find sarcoidosis occurs in a wide area, especially the New England, North Central, and Southeastern States. They suggest a possible correlation between distribution of the disease and some aspect of the United States pine forest environment.

Their study involves 1,700 cases of sarcoidosis diagnosed in VA hospitals between 1949 and 1956. The age, race, sex, occupation, place of birth, and place of initial hospitalization were recorded for each case. The highest rates of hospitalization for white veterans are among those born

in Connecticut, Rhode Island, Georgia, Arkansas, North Dakota, Minnesota, Massachusetts, Alabama, Maine and Virginia. The highest rates of hospitalization for Negro veterans are among those born in the Southeastern States. However, more Negro veterans than white were victims of the disease for the period of the survey. The Negro veteran hospitalization rate was 40.1 per 100,000, contrasted with 3.3 per 100,000 for white veterans.

The VA medical team said another finding of their study is that nearly all cases came from the non-arid sections of the country and that the prevalence of sarcoidosis is much higher in rural communities than in cities.

NEW STUDY UNDERTAKEN ON MULTIPLE SCLEROSIS

Multiple sclerosis, one of the "mystery" diseases of medicine, is under investigation in collaborative research just begun by the Veterans Administration, the National Research Council, and the National Institute of Neurological Diseases and Blindness, of the National Institutes of Health. The project is aimed at finding what role, if any, is played in the development and progress of the disease by geographic, climatic, and allied environmental factors.

A major disorder of the central nervous system, multiple sclerosis is characterized by progressive weakness and inability to coordinate body movements. There is no known cure or effective treatment. The disease strikes mainly at young adults. About 100,000 persons in the United States are afflicted today. The disease brings about the destruction of the myelin sheath, the covering that protects the nerves of the brain and spinal cord in healthy individuals.

The collaborative study will concern itself with members of the armed forces and veterans who have developed the disease during and since World War II. The doctors participating in the project are particularly interested in learning in what latitudes, climates, and geographic areas these people have lived. Since multiple sclerosis is more prevalent in the northern United States and Canada than in the south, an effort will be made to determine if veterans contracting the disease have benefited if and when they have moved to warmer climates.

The investigation will involve the study of medical and other official military and VA records of the men afflicted by multiple sclerosis. In addition to seeking to assess the major environmental factors to which these men have been exposed, the investigators also will study data concerning physical characteristics and defects noted during induction, the degree of stress involved in the performance of military duties, race, occupation, and medical history of parents and other relatives. Dr. Benedict Nagler, chief of the neurology division of VA central office in Washington, D. C., is principal investigator. Dr. Nagler's associates in the project are Dr. L. T. Kurland, chief of the epidemiology branch, National Institute of Neurological Diseases and Blindness, National Institutes of Health; Dr. Gilbert W. Beebe, statistician of the division of medical sciences, National Research Council, National Academy of Sciences; Dr. J. F. Kurtzke, chief of the neurological service of the VA hospital in Coatesville, Pa., and Dr. Eugene L. Youngue, chief of the neurological service of the Leech Farm Road VA hospital in Pittsburgh, Pa.

There have been about 2,000 cases of multiple sclerosis among men in the armed forces between 1942 and the present, and an even greater number among veterans after discharge.

The investigators expect to have available for study the records of 1,000 cases in the armed forces and of more than 2,000 cases involving veterans. Most of the military records will come from Army World War II files in St. Louis.

CLINICAL INVESTIGATION PROGRAM AIDS RESEARCH

More and better research on medical problems of veterans will be provided through creation of full-time research positions for doctors in Veterans Administration hospitals as clinical investigators. Dr. J. C. Nunemaker, director of the education service at VA central office in Washington,

D. C., said physicians and dentists from within and outside VA will be appointed as clinical investigators in January and July. The first group of nine clinical investigators was appointed January 1, 1957.

VA's intensive research attack on medical problems of special importance to veterans has been carried out to date by doctors whose main duty is the care of patients in VA hospitals. Dr. Nunemaker emphasized VA will continue its present support of research by these doctors and will expand such support where justified.

The new program of full-time researchers, Dr. Nunemaker said, will supplement the existing program of part-time research to provide more intensive activities where needed. Each clinical investigator will have research as his primary responsibility and will spend at least three-fourths of his working time in it. He will have as his advisor an outstanding representative of his special field of medicine. The remainder of the clinical investigator's working time will be spent in care of patients as a member of the clinical staff of a VA hospital, and in teaching other physicians. Through his clinical work in the hospital, he will have the advantage of a close relationship to the VA patient-care program.

Appointment as a clinical investigator may be for a period of from one to three years. At the end of this period, the clinical investigator may remain in full-time VA employment with primary responsibility for patient care but with continued support for his research throughout his career.

NEW TB DRUG TO BE TESTED

A new antibiotic drug, streptovaricin, will be tested against tuberculosis by the Veterans Administration in its internationally-known TB chemotherapy program. About 100 patients will be treated for eight months with a combination of streptovaricin and isoniazid, one of the commonly used TB drugs. Patients who will receive the drug combination are those who still have lung cavities from TB after treatment with other drugs.

The streptovaricin study is being carried out at VA hospitals in the Bronx and Manhattan, New York City; Castle Point, N. Y.; Coral Gables, Fla.; East Orange, N. J.; Long Beach, Calif.; Memphis, Tenn.; Minneapolis, Minn.; New Orleans, La.; and Wood, Wis.

The new antibiotic was first isolated from a fungus found in a soil sample collected in Dallas, Tex., and similar to the fungi that produce streptomycin, aureomycin, and terramycin. The purposes of the study are:

1. To determine the effectiveness of streptovaricin in combination with isoniazid for patients who still have lung cavities after other treatment.
2. To find whether streptovaricin can slow down development of resistance to isoniazid by TB germs.

When patients with tuberculosis are given isoniazid over a period of time, the disease germs build up resistance, or ability to tolerate the drug without being harmed, so that isoniazid becomes ineffective.

Begun in 1946, VA's continuing project for testing newer TB drugs in cooperation with the armed forces has given doctors world-wide the modern methods used for treating the disease with streptomycin, PAS, and isoniazid.

In the streptovaricin study, chest X-ray films of each patient will be made before administration of the antibiotic, at two-month intervals during treatment, and after completion of treatment. Various laboratory tests also will be made periodically to check the physical condition of patients receiving streptovaricin and isoniazid.

SPECIALIZED TRAINING IN SERVICE TO THE BLIND OFFERED UNDER TRAINEESHIP PROGRAM

Opportunities for graduate level preparation in professional service to the blind are being made available by the Industrial Home for the Blind in Brooklyn, New York, with the cooperation of the Office of Vocational Rehabilitation. The program of preparation, lasting 20 to 40 weeks, depending upon the needs of the individual student, accepts a limited number of students each fall and spring for preparation as psychologists, vocational counselors, vocational placement specialists, foot travel instructors, vocational in-

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For further information and application blanks, write to Dr. Herbert Rusalem, Director, Professional Training De-

partment, Industrial Home for the Blind, 57 Willoughby Street, Brooklyn, New York. Entrance requirements include a bachelor's degree, a high degree of professional promise, and outstanding personal and professional competency.

NEW RESEARCH ON HYPERTENSION

Discovery of a substance in the human blood stream believed to be the actual cause of high blood pressure and the search for a remedy have been announced by Veterans Administration. The chemical substance, called hypertensin, was isolated by a research group at the VA hospital in Cleveland, Ohio. Now the VA researchers have started the quest for a chemical agent that will counteract hypertensin and thus check the disease which is man's greatest killer. They are quick to point out, however, that a "cure" is still a thing of the future.

Heading the group, according to Dr. Norman P. Shumway, director of professional services for research at the Cleveland VA hospital, are Dr. Joseph R. Kahn, who has devoted more than 28 years of his life to this project, and Leonard T. Skeggs, Jr., young Ph.D., biochemist also known for his work on a new type of "artificial kidney." Biochemists Dr. Kenneth Lentz and, formerly, Dr. Walton Marsh also have been associated with the project. Their research in a special laboratory in the Cleveland VA hospital has been going on for more than ten years.

VA said the importance of their discoveries can be understood from the fact that polio and cancer, compared to hypertension, are comparatively rare diseases. Deaths from diseases associated with the symptom of hypertension—uremia, apoplexy, "hardening of the arteries," and others—exact a toll each year in the United States greater than that of cancer. Fully 25 percent of all deaths is associated with hypertension; and, among men over 50, the death curve sweeps upward.

Dr. Kahn, Dr. Skeggs and their associates in ten years of exacting, tedious, sometimes round-the-clock laboratory effort, have made the following strides along a road that previously had been abandoned as a blind alley:

1. They demonstrated in 1951 for the first time that a substance, hypertensin, known to be a cause of hypertension, actually existed in the human blood stream; and,

2. They extracted and purified hypertensin and, in doing so, made a totally unexpected discovery.

They found there were two types of hypertensin. The first, hypertensin I, was relatively harmless. But hypertensin II had a tremendous potency for constricting the walls of the blood-carrying vessels and causing high blood pressure. They purified hypertensin II and then—and this is the step that makes possible a search for a remedy—they broke it down into its chemical components of amino acids, the "building blocks" of the body.

Under certain disease conditions, the kidney releases into the blood stream a substance called renin which acts upon another material in the blood to produce hypertensin I. This latter material is present in tiny amounts in persons of normal blood pressure but in slightly larger amounts in persons suffering from high blood pressure. However, when an enzyme in the blood converts this into hypertensin II, the result is a sinister increase in its power to constrict blood vessels. How powerful? In their experiments, Drs. Kahn and Skeggs have used 1375 liters of horse blood plasma, equal roughly to 3 tons of whole blood. From this sizable amount, they have succeeded in extracting and purifying one twentieth of a gram of hypertensin II. Yet this tiny mound of hypertensin II is capable of raising to alarming heights the blood pressure of 186,300 persons.

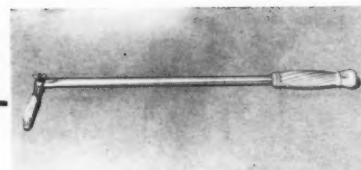
Now that the chemical constituent of hypertensin II is known, the research group is no longer producing it. At the moment it is of no value, although a minute quantity has been used successfully to raise the blood pressure of a person suffering from low blood pressure.

The VA research team has now started on the long road to find some agent which will block the sequence of reactions by which (1) renin produces hypertensin I or (2) that turn hypertensin I into hypertensin II or (3) that cause hypertensin II to constrict blood vessels.

Research into hypertension extends back far beyond the ten years that the VA team has devoted to it. More than 20 years ago, Dr. Harry Goldblatt of Western Reserve University in Cleveland demonstrated, in a now famous experiment, that high blood pressure could be produced by interfering with a kidney's normal flow of blood (thus simulating a known kidney disease). He indicated that a substance was released from the "choked" kidney that caused this constriction of blood vessel walls.

Research groups in the United States and South America extracted the substance, now generally called hypertensin, on an experimental basis. But then efforts to find traces of it in the human blood stream proved futile until Dr. Kahn and Dr. Skeggs succeeded in 1951 in demonstrating its presence.

The VA research group was led quite naturally into this project. Dr. Kahn had been chief assistant to Dr. Goldblatt at Western Reserve University's Institute of Pathology and had been associated with hypertensin research for many years before coming with VA in 1946. Dr. Skeggs had collaborated on the development of a new and far more perfect type of "artificial kidney," and it was the accessibility of this apparatus that led to the re-opening of the search for hypertensin in human blood. Now, research workers have started on the quest for a chemical agent that will prove an analogue or counter agent to hypertensin II and eventually check the widespread destroyer.



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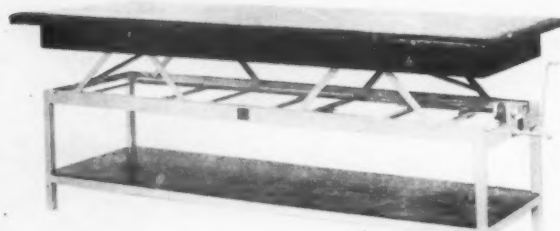
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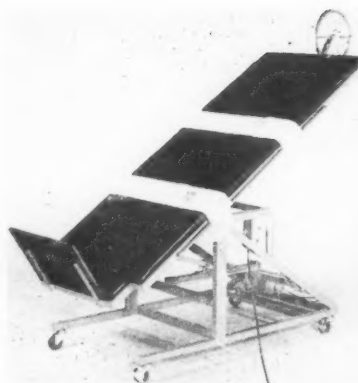
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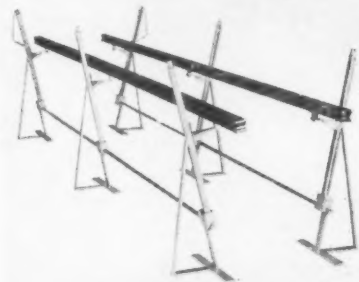
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